E 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648-XC057]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Marine Site Characterization Surveys off New Jersey by NextEra Energy Transmission MidAtlantic Holdings, LLC

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; issuance of an Incidental Harassment Authorization.

SUMMARY: In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that NMFS has issued an Incidental Harassment Authorization to NextEra Energy Transmission MidAtlantic Holdings, LLC (NEETMA) to incidentally harass marine mammals during site characterization surveys off New Jersey.

DATES: This Authorization is effective from July 1, 2022 through June 30, 2023.

FOR FURTHER INFORMATION CONTACT: Kelsey Potlock, Office of Protected Resources, NMFS, (301) 427-8401. Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: *https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act*. In case of problems accessing these documents, please call the contact listed above.

SUPPLEMENTARY INFORMATION:

Background

The MMPA prohibits the "take" of marine mammals, with certain exceptions. Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq*.) direct the Secretary

of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are proposed or, if the taking is limited to harassment, a notice of a proposed incidental harassment authorization (IHA) is provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other "means of effecting the least practicable adverse impact" on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stocks for taking for certain subsistence uses (referred to in shorthand as "mitigation"); and requirements pertaining to the mitigation, monitoring and reporting of the takings are set forth.

The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

Summary of Request

On February 4, 2022, NMFS received a request from NEETMA for an IHA to take marine mammals incidental to marine site characterization surveys occurring in two locations (Northern and Southern survey areas) off the coast of New Jersey in the New Jersey Offshore Transmission Facilities Project (NJOTF or Project). The application was deemed adequate and complete on April 1, 2022. NEETMA's request was for take of a small number of 15 marine mammal species (consisting of 16 stocks) by Level B

harassment only. Neither NEETMA nor NMFS expects serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

NMFS considered all public comments received and determined that no changes to the final IHA were necessary.

Description of Survey Activities

Overview

NEETMA proposes to conduct HRG and geotechnical surveys as part of the NJOTF off the coast of New Jersey. The surveys will take place along proposed submarine export cable routes and at locations for potential offshore platforms. Geotechnical survey activities will include the use of vibracores and/or cone penetration tests (CPTs), to identify and characterize the seabed conditions vertically for project planning and design, and to collect data to identify paleolandscapes.

The purpose of these surveys are to support the siting and design of offshore facilities, including offshore platforms for converter stations and offshore submarine transmission cables. Up to 320 days are planned for survey activities (Table 1). As many as three survey vessels may operate concurrently as part of the site characterization surveys. Underwater sound resulting from NEETMA's survey activities, specifically HRG surveys, has the potential to result in incidental take of marine mammals in the form of behavioral harassment.

Table 1. Number of Survey Days that NEETMA Plans to Perform the Described HRG Survey Activities

Survey Area	Number of active survey days expected[1]
Northern	248
Southern	72

Total: 320 days

1- Up to three total survey vessels may be operating within the survey areas concurrently.

Table 2 identifies the representative survey equipment with the expected potential to cause the take of marine mammals that may be used in support of planned geophysical survey activities. The make and model of the listed equipment may vary depending on availability and the final equipment choices will vary depending upon the final survey design, vessel availability, and survey contractor selection. Geophysical surveys are expected to use several equipment types concurrently in order to collect multiple aspects of geophysical data along one transect. Selection of equipment combinations is based on specific survey objectives.

Table 2. Summary of Representative Equipment Specifications

Equipment category	HRG Survey equipment type	Operating frequency ranges (kHz)	Operational source level ranges (dB re 1 µPa m)	Source Level $l_{0\text{-peak}}$ (dB re 1 µPa m)	Beamwidth ranges (degrees)	Typical pulse durations (millisecond)	Pulse repetition rate (Hz)
Non-parametric shallow penetration SBPs (non-impulsive)							
CHIRPs	ET 216 (2000DS or 3200 top unit)	2-16 2-8	195	-	24	20	6
	ET 424	4-24	176	-	71	3.4	2
	ET 512	0.7-12	179	-	80	9	8
	GeoPulse 5430A	2-17	196	-	55	50	10
	Teledyne Benthose Chirp III – TTV 170	2-7	197	-	100	60	15
Medium penetration SBPs (impulsive)							

Sparker	AA, Dura-spark UHD (400 tips, 500 J)[1]	0.3-1.2	203	211	Omnidirectional	1.1	4
	GeoMarine Geo Spark 2000 (400 tip)[1]	0.05-3	203	213	Omnidirectional	3.4	1
Boomer	AA, triple plate S-Boom (700-1,000 J)[2]	0.1-5	205	211	80	0.6	4

Note: - = not applicable; µPa = microPascal; AA = Applied Acoustics; dB = decibel; ET = EdgeTech; J = joule; Omni = omnidirectional source; re = referenced to; SL = source level; 0-PK = zero-to-peak; RMS = root mean squared; UHD = ultra-high definition.

[1] - The Dura-spark measurements and specifications provided in Crocker and Fratantonio (2016) were used for all sparker systems planned for NEETMA's survey. These include variants of the Dura-spark sparker system and various configurations of the GeoMarine Geo-Source sparker system. The data provided in Crocker and Fratantonio (2016) represent the most applicable data for similar sparker systems with comparable operating methods and settings when manufacturer or other reliable measurements are not available.

[2] - Crocker and Fratantonio (2016) provide S-Boom measurements using two different power sources (CSP–D700 and CSP–N). The CSP–D700 power source was used in the 700 J measurements but not in the 1,000 J measurements. The CSP–N source was measured for both 700 J and 1,000 J operations but resulted in a lower SL; therefore, the single maximum SL value was used for both operational levels of the S-Boom.

A detailed description of the surveys planned by NEETMA was provided in the **Federal Register** notice of the proposed IHA (87 FR 27575; May 9, 2022). Since that time, no changes have been made to the planned survey activities. Therefore, a detailed description is not provided here. Please refer to that **Federal Register** notice for additional description of the specified activities.

Mitigation, monitoring, and reporting measures are described in detail later in this document (please see the **Mitigation** and **Monitoring and Reporting** sections).

Comments and Responses

A notice of NMFS' proposal to issue an IHA to NEETMA was published in the **Federal Register** on May 9, 2022 (87 FR 27575), initiating a 30-day public comment

period. That notice described, in detail, NEETMA's activities, the marine mammal species that may be affected by the activities, and the anticipated effects on marine mammals. In that notice, we requested public input on the request for authorization described therein, our analyses, the proposed authorization, and any other aspect of the notice of proposed IHA, and requested that interested persons submit relevant information, suggestions, and comments.

NMFS received letters from two environmental non-governmental organizations (eNGOs) (Oceana, Inc. and Clean Ocean Action (COA)) and from a local citizen group (Save Long Beach Island (LBI)). All substantive comments, and NMFS' responses, are provided below, and the letters are available online at: *https://www.fisheries.noaa.gov/action/incidental-take-authorization-nextera-energy-transmission-midatlantic-holdings-llc-marine*). Please review the letters for full details regarding the comments and underlying justification.

Comment 1: Oceana, COA, and LBI asserted that NMFS must fully consider the discrete effects of each activity and the cumulative effects of the suite of approved, proposed and potential activities on marine mammals and North Atlantic right whales in particular and ensure that the cumulative effects are not excessive before issuing or renewing an IHA. The commenters additionally state that NMFS should include nearby survey activities in the analysis performed in support of this IHA, specifically related to surveys and activities occurring in the Ocean Wind 1 (OCS-A-0498) and Atlantic Shores (OCS-A-0499) leases, as the activities are occurring during similar timeframes and in similar spatial locations.

NMFS response: Neither the MMPA nor NMFS' codified implementing regulations call for consideration of other unrelated activities and their impacts on populations. The preamble for NMFS' implementing regulations (54 FR 40338; September 29, 1989) states in response to comments that the impacts from other past and

ongoing anthropogenic activities are to be incorporated into the negligible impact analysis via their impacts on the baseline. Consistent with that direction, NMFS has factored into its negligible impact analysis the impacts of other past and ongoing anthropogenic activities via their impacts on the baseline, *e.g.*, as reflected in the species' density/distribution and status, population size and growth rate, and other relevant factors (see **Negligible Impact Analysis and Determination** section). The 1989 final rule for the MMPA implementing regulations also addressed public comments regarding cumulative effects from future, unrelated activities. There NMFS stated that such effects are not considered in making findings under section 101(a)(5) concerning negligible impact. In this case, this IHA, as well as other IHAs currently in effect or proposed within the specified geographic region, are appropriately considered an unrelated activity relative to the others. The IHAs are unrelated in the sense that they are discrete actions under section 101(a)(5)(D), issued to discrete applicants.

Section 101(a)(5)(D) of the MMPA requires NMFS to make a determination that the take incidental to a "specified activity" will have a negligible impact on the affected species or stocks of marine mammals. NMFS' implementing regulations require applicants to include in their request a detailed description of the specified activity or class of activities that can be expected to result in incidental taking of marine mammals. 50 CFR 216.104(a)(1). Thus, the "specified activity" for which incidental take coverage is being sought under section 101(a)(5)(D) is generally defined and described by the applicant. Here, NEETMA was the applicant for the IHA, and we are responding to the specified activity as described in that application (and making the necessary findings on that basis).

Through the response to public comments in the 1989 implementing regulations, NMFS also indicated (1) that we would consider cumulative effects that are reasonably foreseeable when preparing a NEPA analysis, and (2) that reasonably foreseeable

cumulative effects would also be considered under section 7 of the ESA for ESA-listed species, as appropriate. Accordingly, NMFS has written Environmental Assessments (EA) that addressed cumulative impacts related to substantially similar activities, in similar locations, *e.g*., the 2017 Ocean Wind, LLC EA for site characterization surveys off New Jersey; the 2018 Deepwater Wind EA for survey activities offshore Delaware, Massachusetts, and Rhode Island; the 2019 Avangrid EA for survey activities offshore North Carolina and Virginia; and the 2019 Orsted EA for survey activities offshore southern New England. Cumulative impacts regarding issuance of IHAs for site characterization survey activities such as those planned by NEETMA have been adequately addressed under NEPA in prior environmental analyses that support NMFS' determination that this action is appropriately categorically excluded from further NEPA analysis. NMFS independently evaluated the use of a categorical exclusion for issuance of NEETMA's IHA, which included consideration of extraordinary circumstances.

For ESA-listed species, the cumulative effects of substantially similar activities in the same geographic region have been analyzed in the past under Section 7 of the ESA when NMFS has engaged in formal intra-agency consultation, such as the 2013 programmatic Biological Opinion for BOEM Lease and Site Assessment Rhode Island, Massachusetts, New York, and New Jersey Wind Energy Areas (*https://repository.library.noaa.gov/view/noaa/29291*). Analyzed activities included those for which NMFS issued Atlantic Shores' 2020 IHA and subsequent 2021 renewal IHA (85 FR 21198; April 16, 2020 and 86 FR 21289; April 22, 2021), which are substantially similar to those planned by NEETMA under this current IHA request. This Biological Opinion determined that NMFS' issuance of IHAs for site characterization survey activities associated with leasing, individually and cumulatively, are not likely to adversely affect listed marine mammals. NMFS notes, that while issuance of this IHA is covered under a different consultation, this Biological Opinion (BiOp) remains valid.

In addition, NMFS disagrees with LBI's assertion that separate specified activities should be considered together in each MMPA analysis on the basis that they share a similar regional location. Under the MMPA, NMFS is required to consider applications upon request. To date, NMFS has not received any joint application from Orsted, Atlantic Shores, and NEETMA regarding their site characterization surveys off of New Jersey. While an individual company owning multiple lease areas may apply for a single authorization to conduct site characterization surveys across a combination of those lease areas, such as what was done by Orsted in their recent surveys from New York to Massachusetts (see 85 FR 63508, October 8, 2020; 87 FR 13975, March 11, 2022), this is not applicable in this case to the surveys being performed by Atlantic Shores, Orsted, and NEETMA off New Jersey. In the future, if applicants wish to undertake this approach, NMFS is open to the receipt of joint applications and additional discussions on joint actions.

NMFS notes that these actions (Atlantic Shores', Orsted's, and NEETMA's site characterization surveys) are occurring in spatially distinct areas and not within overlapping areas. The entities' survey activities will not occur in the same location at any one time. Any other authorization issued to Orsted or Atlantic Shores, relating to activities in or around OCS-A-0498 or OCS-A-0499, respectively, would be considered a discrete activity with its own separate and independent action.

Comment 2: LBI asserts that it is not clear where the source level information for the GeoMarine Geo Spark 2000 acoustic unit came from.

NMFS response: NEETMA states in their IHA application (*https://media.fisheries.noaa.gov/2022-05/NEETMA_2022IHA_App_OPR1.pdf*) that the information and source level for the GeoMarine Geo Spark 2000 unit, with the same tips (400) and source level (203 dB re 1 μPa m), was previously used in the analysis supporting issuance of the Vineyard Wind 1 Marine Site Characterization Survey (86 FR

40469; June 7, 2021), which can be found on NMFS' website: *https://www.fisheries.noaa.gov/action/incidental-take-authorization-vineyard-wind-1-marine-site-characterization-surveys*. Within the Vineyard Wind 1 IHA application, the same approach as recently used in the Atlantic Shores HRG survey (87 FR 24103; April 22, 2022) is described where the SIG ELC 820 sparker was used as a proxy for the GeoMarine Geo Spark 2000 unit (Atlantic Shores used the SIG ELC 820 as a proxy for the Applied Acoustics Dura-Spark 240), given the same source level, peak source level, energy source level, and pulse duration were present for all three acoustic sources.

Please refer to Table 5 of the proposed **Federal Register** notice for NEETMA (87 FR 27575; May 9, 2022) where all the distances to the Level B harassment threshold are 141 m for the Applied Acoustics Dura-Spark UHG (500 J/ 400 tip), the Applied Acoustics Dura-Spark UHD (440 + 400), and the GeoMarine Geo Spark 2000 (400 tips).

Comment 3: LBI states that NMFS' assumption that use of a 20logR transmission loss factor (*i.e.*, spherical spreading) is inappropriate, and suggests that NMFS must use a 15 dB propagation loss factor. LBI goes on to comment that the use of the higher propagation loss coefficient is not consistent with what NMFS' analyses for previous actions and underestimates the distance to the Level B harassment threshold, which would cause an underestimation of marine mammal takes.

NMFS response: A major component of transmission loss is spreading loss and, from a point source in a uniform medium, sound spreads outward as spherical waves ("spherical spreading") (Richardson *et al.*, 1995). In water, these conditions are often thought of as being related to deep water, where more homogenous conditions may be likely. However, the theoretical distinction between deep and shallow water is related more to the wavelength of the sound relative to the water depth, versus the water depth itself. Therefore, when the sound produced is in the kilohertz range, where wavelength is

relatively short, much of the continental shelf may be considered “deep” for purposes of evaluating likely propagation conditions.

As described in the notice of proposed IHA, the area of water ensonified at or above the root mean square (RMS) 160 dB threshold was calculated using a simple model of sound propagation loss, which accounts for the loss of sound energy over increasing range. Our use of the spherical spreading model (where transmission loss = 20 * log [range]; such that there would be a 6-dB reduction in sound level for each doubling of distance from the source) is a reasonable approximation over the relatively short distances involved. Even in conditions where cylindrical spreading (where transmission loss = 10 * log [range]; such that there would be a 3-dB reduction in sound level for each doubling of distance from the source) may be appropriate (*e.g.*, non-homogenous conditions where sound may be trapped between the surface and bottom), this effect does not begin at the source. In any case, spreading is usually more or less spherical from the source out to some distance, and then may transition to cylindrical (Richardson *et al.*, 1995). For these types of surveys, NMFS has determined that spherical spreading is a reasonable assumption even in relatively shallow waters (in an absolute sense) as the reflected energy from the seafloor will be much weaker than the direct source and the volume of water influenced by the reflected acoustic energy would be much smaller over the relatively short distances involved.

The assumption of a 20-dB transmission loss coefficient is also supported by more recent data on sound transmission by sparker sources collected by the U.S. Geological Survey (USGS) in waters offshore California in spring 2021 (Pers. Comm., C. Ruppel, 2022). Unpublished data from these recent sound source verification experiments indicate that, at the frequencies of many HRG instruments, spherical, not cylindrical, spreading applies even in waters only tens of meters deep. For a sparker source, even at 25-m water depth, the signal spreading was almost completely spherical. As noted

previously, at the higher frequency of most HRG sources, the spreading is expected to be spherical because the wavelength of the signal is very small compared to the water depth. That is the criterion for spherical spreading, which is why spherical spreading applies to most HRG sources, regardless of water depth. This would not be the case for lower frequency (*i.e.*, larger wavelength) sources, such as airguns.

In support of its position, LBI cites several examples of use of practical spreading (a useful real-world approximation of conditions that may exist between the theoretical spreading modes of spherical and cylindrical; 15logR) in asserting that this approach is also appropriate here. However, these examples (U.S. Navy construction at Newport, RI, and NOAA construction in Ketchikan, AK) are not relevant to the activity at hand. First, these actions occur in even shallower water (*e.g.*, less than 10 m for Navy construction). Of greater relevance to the action here, pile driving activity produces sound with longer wavelengths than the sound produced by the acoustic sources planned for use here. As noted previously, a determination of appropriate spreading loss is related to the ratio of wavelength to water depth more than to a strict reading of water depth. NMFS indeed uses practical spreading in typical coastal construction applications, but for reasons described here, uses spherical spreading when evaluating the effects of HRG surveys on the continental shelf.

In addition, this analysis is likely conservative for other reasons, *e.g.*, the lowest frequency was used for systems that are operated over a range of frequencies and other sources of propagation loss (*e.g.,* interference effects) are neglected.

NMFS has determined that spherical spreading is the most appropriate form of propagation loss for these surveys and has relied on this approach for past IHAs with similar equipment, locations, and depths. Please refer back to the Garden State HRG IHA (83 FR 14417; April 4, 2018) and the 2019 Skipjack HRG IHA (84 FR 51118; September 27, 2019) for examples. Prior to the issuance of these IHAs (approximately 2018 and

older), NMFS typically relied upon practical spreading for these types of survey activities. However, as additional scientific evidence became available, including numerous sound source verification reports, NMFS determined that this approach was inappropriately conservative and, since that time, as consistently used spherical spreading. Furthermore, NMFS' User Spreadsheet tool assumes a "safe distance" methodology for mobile sources where propagation loss is spherical spreading (20LogR) (*https://media.fisheries.noaa.gov/2020-12/User_Manual%20_DEC_2020_508.pdf?null*), and NMFS calculator tool for estimating isopleths to Level B harassment thresholds also incorporates the use of spherical spreading.

Comment 4: LBI asserts that NMFS has not appropriately considered the location of North Atlantic Right Whales (NARW) migratory habitat in relation to the survey and, in so doing, has not correctly evaluated the potential for impacts to NARW migratory habitat.

NMFS response: NMFS disagrees with LBI's assertion that the close proximity of the NARW migratory corridor is not discussed or accounted for in the proposed **Federal Register** notice. Page 27581 (*https://www.federalregister.gov/d/2022-09917/p-42*) includes an overview of the NARW and its habitat, including text noting that any NARWs in the "survey areas are expected to be transient, most likely migrating through the area" due to the overlap of the Project area with the migratory corridor. More information is presented on Page 27582 (*https://www.federalregister.gov/d/2022-09917/p-44*) and NMFS reiterates it here: "The proposed survey area is part of a migratory corridor Biologically Important Area (BIA) for North Atlantic right whales (effective March-April and November-December) that extends from Massachusetts to Florida (LeBrecque *et al*., 2015). Off the coast of New Jersey, the migratory BIA extends from the coast to beyond the shelf break. This important migratory area is approximately 269,488 square kilometers (km^2) in size (compared with the approximately 5,183.97 km^2

of total estimated Level B harassment ensonified area associated with the 320 planned survey days) and is comprised of the waters of the continental shelf offshore the East Coast of the United States, extending from Florida through Massachusetts. NMFS' regulations at 50 CFR part 224.105 designated nearshore waters of the Mid-Atlantic Bight as Mid-Atlantic U.S. Seasonal Management Areas (SMA) for right whales in 2008. SMAs were developed to reduce the threat of collisions between ships and right whales around their migratory route and calving grounds. A portion of one SMA, which occurs off the mouth of Delaware Bay, overlaps spatially with a section of the proposed survey area. The SMA, which occurs off the mouth of Delaware Bay, is active from November 1 through April 30 of each year. Within SMAs, the regulations require a mandatory vessel speed (less than 10 kn) for all vessels greater than 65 ft. A portion of one SMA overlaps spatially with the northern section of the proposed survey area."

NMFS also reiterates the language found on Page 27596 within the Negligible Impact Analysis and Determination section, which has not changed since the initial publication of the proposed **Federal Register** notice and is carried forward into this final notice: "The status of the North Atlantic right whale population is of heightened concern and, therefore, merits additional analysis. As noted previously, elevated North Atlantic right whale mortalities began in June 2017 and there is an active UME. Overall, preliminary findings support human interactions, specifically vessel strikes and entanglements, as the cause of death for the majority of right whales. As noted previously, the proposed survey area overlaps a migratory corridor BIA for North Atlantic right whales. Due to the fact that the proposed survey activities are temporary and the spatial extent of sound produced by the survey would be very small relative to the spatial extent of the available migratory habitat in the BIA, right whale migration is not expected to be impacted by the proposed survey."

Comment 5: LBI and COA assert that Level A harassment may occur during site characterization surveys and that it was not accounted for in the proposed **Federal Register** notice. LBI asserts specifically that Level A harassment will result from cumulative noise exposure, contradicting NMFS' analysis.

NMFS response: NMFS acknowledges the concerns brought up by LBI regarding the potential for Level A harassment of marine mammals. However, no Level A harassment is expected to result, even in the absence of mitigation, given the characteristics of the sources planned for use. This is additionally supported by the required mitigation and very small estimated Level A harassment zones described in NEETMA's IHA application in Table 1-4 (*https://media.fisheries.noaa.gov/2022-05/NEETMA_2022IHA_App_OPR1.pdf*). Furthermore, the commenters do not provide any support for the apparent contention that Level A harassment is a potential outcome of these activities. As discussed in the notice of proposed IHA, NMFS considers this category of survey operations to be near de minimis, with the potential for Level A harassment for any species to be discountable.

As described in the **Estimated Take** section of the proposed **Federal Register** notice (87 FR 27575; May 9, 2022), NMFS has established a PTS (Level A harassment) threshold of 183 dB cumulative SEL for low frequency cetaceans (which include North Atlantic right whales). Estimated Level A harassment zones for similar equipment (*i.e.*, the Applied Acoustics Dura-Spark 240 sparker, GeoMarine Geo Spark 2000 (400 tip)) were provided in Table 1-4 in NEETMA's IHA application (*https://media.fisheries.noaa.gov/2022-05/NEETMA_2022IHA_App_OPR1.pdf*), showing that a NARW would have to come within 1 m of the sparker source to potentially incur PTS. Due to the mitigation measures being implemented, including the required vessel strike reduction measures, NMFS considers it impossible that a NARW will reasonably be in sufficiently close proximity to the active acoustic source (*i.e.*, the sparker) to incur

PTS. NMFS has reviewed the analysis and confirmed that it is accurate and relevant to this action.

Not only are any NARWs in the area migrating, meaning that their occurrence in the area is expected to be of relatively brief duration and the likelihood of exposures of longer duration or at closer range minimized, NEETMA is also required to not approach any NARW within 500 m or operate the sparker within 500 m of a NARW. As such, there is essentially no potential for a NARW to experience PTS (*i.e.*, Level A harassment) from the described surveys.

Comment 6: LBI discusses their belief that all pathways to the Level B harassment threshold and/or masking of cetacean communication that could lead to the serious injury and/or mortality of the animal have not been fully analyzed by NMFS.

NMFS response: NMFS disagrees that the potential impacts of masking were not properly considered and expects that the masking effects to any one individual whale from one survey are expected to be minimal. Masking is referred to as a chronic effect because one of the key harmful components of masking is its duration—the fact that an animal would have reduced ability to hear or interpret critical cues becomes much more likely to cause a problem the longer it is occurring. Also, inherent in the concept of masking is the fact that the potential for the effect is only present during the times that the animal and the source are in close enough proximity for the effect to occur (and further this time period would need to coincide with a time that the animal was utilizing sounds at the masked frequency) and, as our analysis (both quantitative and qualitative components) indicates, because of the relative movement of whales and vessels, we do not expect these exposures with the potential for masking to be of a long duration within a given day. Further, because of the relatively low density of mysticetes, and relatively large area over which the vessels travel, we do not expect any individual whales to be

exposed to potentially masking levels from these surveys for more than a few days in a year.

As noted previously, any masking effects of this survey are expected to be limited and brief, if present. Given the likelihood of significantly reduced received levels beyond even short distances from the survey vessel, combined with the short duration of potential masking and the lower likelihood of extensive additional contributors to background noise offshore and within these short exposure periods, we believe that the incremental addition of the survey vessel is unlikely to result in more than minor and short-term masking effects, likely occurring to some small number of the same individuals captured in the estimate of behavioral harassment.

NMFS recognizes that acute stress from acoustic exposure is one potential impact of these surveys, and that chronic stress can have fitness, reproductive, etc. impacts at the population-level scale. NMFS has carefully reviewed the best available scientific information in assessing impacts to marine mammals, and recognizes that the surveys have the potential to impact marine mammals through behavioral effects, stress responses, and auditory masking. However, NMFS does not expect that the generally short-term, intermittent, and transitory marine site characterization survey activities planned by NEETMA will create conditions of acute or chronic acoustic exposure leading to long-term physiological stress responses in marine mammals. NMFS has also prescribed a robust suite of mitigation measures, including extended distance shutdowns for NARWs, which are expected to further reduce the duration and intensity of acoustic exposure, while limiting the potential severity of any possible behavioral disruption. The potential for chronic stress was evaluated in making the determinations presented in NMFS's negligible impact analyses. Because NARWs generally use this location in a transitory manner, specifically for migration, any potential impacts from these surveys are lessened for other behaviors due to the brief periods where exposure is possible. In

context of these expected low-level impacts, which are not expected to meaningfully affect important behavior, we also refer again to the large size of the migratory corridor (BIA of 269,448 km^2) compared with the survey area (5,184 km^2). Thus, the transitory nature of NARWs at this location means it is unlikely for any exposure to cause chronic effects as NEETMA's planned survey area and ensonified zones are much smaller than the overall migratory corridor. Because of this, NMFS does not expect any acute or cumulative stress, including any masking, to be a detrimental factor to the health, fitness, or survival of NARWs from NEETMA's described survey activities.

NMFS continues to maintain that the best available science indicates that only Level B harassment, or minor disruptions of behavioral patterns, may occur from the planned site characterization surveys. No mortality or serious injury is expected to occur as a result of the planned surveys, and there is no scientific evidence indicating that any marine mammal could experience these as a direct result of noise from geophysical survey activity. Authorization of mortality and serious injury may not occur via IHAs, only within Incidental Take Regulations (ITRs), and such authorization was neither requested nor proposed. NMFS notes that in its history of authorizing take of marine mammals, there has never been a report of any serious injuries or fatalities of a marine mammal related to the site characterization surveys, including for NARW. We emphasize that an estimate of take numbers alone is not sufficient to assess impacts to a marine mammal population. Take numbers must be viewed contextually with other factors, as explained in the **Negligible Impact Analysis and Determination** section of this notice.

Comment 7: LBI asserts that the criteria for determining "negligible impact" to the NARW have not been clearly or well defined.

NMFS response: NMFS disagrees with LBI's position regarding the negligible impact analysis, and the commenters do not provide a reasoned basis for finding that the effects of the specified activity will be greater than negligible on any species or stock.

The Negligible Impact Analysis and Determination section of the proposed IHA (87 FR 27575; May 9, 2022) provides a detailed qualitative discussion supporting NMFS' determination that any anticipated impacts from this action will be negligible. The section contains a number of factors that were considered by NMFS based on the best available scientific data and why we concluded that impacts resulting from the specified activity are not reasonably expected to, or reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.

With specific regard to NARW, we note that take is authorized for only a very small percentage of the right whale population (see Table 11). Furthermore, NMFS notes that while a species *may* be taken during activities, this is not always the case. For example, we note that Ocean Wind's (Orsted) previous monitoring report (*https://www.fisheries.noaa.gov/action/incidental-take-authorization-ocean-wind-llc-marine-site-characterization-surveys-new-jersey*) indicates that no right whales experienced harassment during the previous activity, although take of the species (Level B harassment only) was authorized. However, the numbers of potential incidents of take or animals taken are only part of an assessment and are not, alone, decisively indicative of the degree of impact. In order to adequately evaluate the effects of noise exposure at the population level, the total number of take incidents must be further interpreted in context of relevant biological and population parameters and other biological, environmental, and anthropogenic factors and in a spatially and temporally explicit manner. The effects to individuals of a "take" are not necessarily equal. Some take events represent exposures that only just exceed a Level B harassment threshold, which would be expected to result in lower-level impacts, while other exposures occur at higher received levels and would typically be expected to have comparatively greater potential impacts on an individual. Further, responses to similar received levels may result in significantly different impacts on an individual dependent upon the context of the

exposure or the status of the individuals (*e.g.*, if it occurred in an area and time where concentrated feeding was occurring, or to individuals weakened by other effects). In this case, NMFS reiterates that no such higher level takes are expected to occur. The maximum anticipated Level B harassment zone is 141 m, a distance smaller than the precautionary shutdown zone of 500 m. To the extent that any exposure of NARW does occur, it would be expected to result in lower-level impacts that are unlikely to result in significant or long-lasting impacts to the exposed individual and, given the relatively small amount of exposures expected to occur, it is unlikely that these exposures would result in population-level impacts. NMFS acknowledges that impacts of a similar degree on a proportion of the individuals in a stock may have differing impacts to the stock based on its status, *i.e.*, smaller stocks may be less able to absorb deaths or reproductive suppression and maintain similar growth rates as larger stocks. However, even given the precarious status of the NARW, the low-level nature of the impacts expected to occur for only a few individuals means that the population status does not weigh meaningfully in NMFS' consideration of population-level impacts. The commenters provide no substantive reasoning to contradict this finding, and do not support their assertions of effects greater than NMFS has assumed may occur.

Additionally, NMFS evaluated the impacts of HRG surveys on ESA-listed species under ESA section 7, with NMFS Greater Atlantic Regional Fisheries Office (GARFO) as the consulting agency. NMFS GARFO determined that issuance of the IHA to NEETMA was not likely to adversely affect listed species or the critical habitat of any ESA-listed species or result in the take of any marine mammals in violation of the ESA.

Comment 8: LBI asserts that the criteria for "small numbers" is not scientifically supported, nor consistent with a prior judicial decision.

NMFS response: NMFS disagrees with LBI's arguments on the topic of small numbers. Although there is limited legislative history available to guide NMFS and an

apparent lack of biological underpinning to the concept, we have worked to develop a reasoned approach to small numbers. NMFS explains the concept of "small numbers" in recognition that there could also be quantities of individuals taken that would correspond with "medium" and "large" numbers. As such, NMFS considers that one-third of the most appropriate population abundance number—as compared with the assumed number of individuals taken—is an appropriate limit with regard to "small numbers." This relative approach is consistent with the statement from the legislative history that "[small numbers] is not capable of being expressed in absolute numerical limits" (H.R. Rep. No. 97-228, at 19 (September 16, 1981)), and relevant case law (*Center for Biological Diversity* v. *Salazar*, 695 F.3d 893, 907 (9th Cir. 2012) (holding that the U.S. Fish and Wildlife Service reasonably interpreted "small numbers" by analyzing take in relative or proportional terms)). In regards to LBI's suggestion that the one-third number is inconsistent with prior case law, we note that LBI cited the *NRDC* v. *Evans* decision of October 31, 2002 (232 F. Supp. 2d 1003, N.D. Cal. 2002), which was related to the plaintiffs' motion for a preliminary injunction. Ultimately, after parties' cross-motions for summary judgment, the Evans court held that NMFS' regulatory definition of small numbers (which NMFS did not apply here) improperly conflated the small numbers and negligible impact issues. *NRDC* v. *Evans*, 279 F. Supp. 2d at 1129. Contrary to LBI's suggestion, the Evans court expressly stated that it was not setting any numerical limit for small numbers. *NRDC* v. *Evans*, 279 F. Supp. 2d at 1153. As for LBI's suggestion to reconsider small numbers specifically for NARW, the argument to establish a small numbers threshold on the basis of stock-specific context is unnecessarily duplicative of the required negligible impact finding, in which relevant biological and contextual factors are considered in conjunction with the amount of take.

Comment 9: LBI asserts that NMFS' 160 dB harassment criterion for intermittent sound sources is too high, and that the 120 dB criterion for continuous noise sources should be used instead.

NMFS response: NMFS disagrees with LBI's comment, which references a Marine Mammal Commission recommendation made in reference to the proposed authorization of take incidental to use of scientific sonars (such as echosounders). We refer the reader to the original response (84 FR 46788; October 7, 2019) for full detail and provide a summary here.

First, we provide some necessary background on implementation of acoustic thresholds. NMFS has historically used generalized acoustic thresholds based on received levels to predict the occurrence of behavioral harassment, given the practical need to use a relatively simple threshold based on information that is available for most activities. Thresholds were selected in consideration largely of measured avoidance responses of mysticete whales to airgun signals and to industrial noise sources, such as drilling. The selected thresholds of 160 dB rms SPL and 120 dB rms SPL, respectively, have been extended for use since then for estimation of behavioral harassment associated with noise exposure from sources associated with other common activities as well.

Sound sources can be divided into broad categories based on various criteria or for various purposes. As discussed by Richardson *et al*. (1995), source characteristics include strength of signal amplitude, distribution of sound frequency and, importantly in context of these thresholds, variability over time. With regard to temporal properties, sounds are generally considered to be either continuous or transient (*i.e*., intermittent). Continuous sounds, which are produced by the industrial noise sources for which the 120-dB behavioral harassment threshold was selected, are simply those whose sound pressure level remains above ambient sound during the observation period (ANSI, 2005). Intermittent sounds are defined as sounds with interrupted levels of low or no sound

(NIOSH, 1998). Simply put, a continuous noise source produces a signal that continues over time, while an intermittent source produces signals of relatively short duration having an obvious start and end with predictable patterns of bursts of sound and silent periods (*i.e.*, duty cycle) (Richardson and Malme, 1993). It is this fundamental temporal distinction that is most important for categorizing sound types in terms of their potential to cause a behavioral response. For example, Gomez *et al*. (2016) found a significant relationship between source type and marine mammal behavioral response when sources were split into continuous (*e.g.*, shipping, icebreaking, drilling) versus intermittent (*e.g.*, sonar, seismic, explosives) types. In addition, there have been various studies noting differences in responses to intermittent and continuous sound sources for other species (*e.g.*, Neo *et al*., 2014; Radford *et al*., 2016; Nichols *et al*., 2015).

Sound sources may also be categorized based on their potential to cause physical damage to auditory structures and/or result in threshold shifts. In contrast to the temporal distinction discussed previously, the most important factor for understanding the differing potential for these outcomes across source types is simply whether the sound is impulsive or not. Impulsive sounds, such as those produced by airguns, are defined as sounds which are typically transient, brief (< 1 sec), broadband, and consist of a high peak pressure with rapid rise time and rapid decay (ANSI, 1986; NIOSH, 1998). These sounds are generally considered to have greater potential to cause auditory injury and/or result in threshold shifts. Non-impulsive sounds can be broadband, narrowband or tonal, brief or prolonged, continuous or intermittent, and typically do not have the high peak pressure with rapid rise/decay time that impulsive sounds do (ANSI, 1995; NIOSH, 1998). Because the selection of the 160-dB behavioral threshold was focused largely on airgun signals, it has historically been commonly referred to as the “impulse noise” threshold (including by NMFS). However, this longstanding confusion in terminology—*i.e.*, the erroneous impulsive/continuous dichotomy—presents a narrow view of the sound

sources to which the thresholds apply, and inappropriately implies a limitation in scope of applicability for the 160-dB behavioral threshold in particular.

Following the background discussion provided previously, we note that LBI apparently misunderstands the crux of the Marine Mammal Commission argument that it references, *i.e.*, that because scientific sonars are not impulsive sound sources, they must be assessed using the 120-dB behavioral threshold appropriate for continuous noise sources. The sparker source at issue here is in fact an impulsive source. Therefore, the historical confusion regarding terminology associated with the 160 dB threshold (*i.e.*, impulsive versus intermittent) is not relevant, and there is no reasonable argument to be made in support of using the 120 dB threshold versus the 160 dB threshold.

Comment 10: LBI states that, based on their contention that serious injury and/or mortality is a potential outcome of the specified activity for NARWs, authorization under section 101(a)(5)(A) of the MMPA (Incidental Take Regulation (ITR) with subsequent Letters of Authorization (LOA)) is required.

NMFS response: NMFS acknowledges that authorization under section 101(a)(5)(A) of the MMPA would be required were mortality or serious injury an expected outcome of the action. However, as noted previously, there is no scientific evidence suggesting that such outcomes are possible and, therefore, an IHA issued under section 101(a)(5)(D) is appropriate. Similarly, if the analysis presented by LBI were considered credible, the results would necessitate a revision to NMFS' negligible impact determination. However, as detailed in previous comment responses and **Federal Register** notices, the LBI analysis is not based on the best scientific evidence available, and NMFS does not consider it to be a credible analysis. Separately, it appears that LBI equates Level A harassment with serious injury and mortality in suggesting that Incidental Take Regulations are required. As discussed herein, Level A harassment is not an expected outcome of the specified activity. However, we clarify that section

101(a)(5)(D) of the MMPA, which governs the issuance of IHAs, indicates that the "the Secretary shall authorize . . . . taking by harassment [. . . .]" The definition of "harassment" in the MMPA clearly includes both Level A and Level B harassment.

To reiterate, NMFS does not expect any serious injury or mortality, even absent mitigation efforts, because of the nature of the activities described in the proposed **Federal Register** notice. Furthermore, NMFS included a vessel strike analysis in the proposed notice under the **Potential Effects of Specified Activities on Marine Mammals and Their Habitat** section. We identified that at average transit speed for geophysical survey vessels, the probability of serious injury or mortality resulting from a strike is low enough to be discountable. However, the likelihood of a strike actually happening is again low given the smaller size of these vessels and generally slower speeds during transit. Further, NEETMA is required to implement monitoring and mitigation measures during transit, including observing for marine mammals and maintaining defined separation distances between the vessel and any marine mammal (see the **Mitigation** and **Monitoring and Reporting** sections). Finally, despite several years of marine site characterization surveys occurring off the U.S. east coast, no vessels supporting offshore wind development have struck a marine mammal either in transit or during surveying. Because vessel strikes are not reasonably expected to occur, no such take is authorized. The mitigation measures in the IHA related to vessel strike avoidance are not limited to vessels operating within the survey area or cable corridors and therefore apply to transiting vessels. Because of these reasons and the addition of mitigation efforts, including required vessel separation distances to further reduce any risk, we do not find that a Rulemaking is necessary for NEETMA's HRG surveys.

Comment 11: LBI recommends that NMFS should require Passive Acoustic Monitoring (PAM) at all times to maximize the probability of detection for NARW. LBI provided recommendations that NMFS should require PAM at all times, both day and

night, to maximize the probability of detection for NARW, as well as other species and stocks.

NMFS response: LBI does not explain why it expects that PAM would be effective in detecting vocalizing mysticetes, nor does NMFS agree that this measure is warranted, as it is not expected to be effective for use in detecting the species of concern. It is generally accepted that, even in the absence of additional acoustic sources, using a towed passive acoustic sensor to detect baleen whales (including NARWs) is not typically effective because the noise from the vessel, the flow noise, and the cable noise are in the same frequency band and will mask the vast majority of baleen whale calls. Vessels produce low-frequency noise, primarily through propeller cavitation, with main energy in the 5-300 Hertz (Hz) frequency range. Source levels range from about 140 to 195 decibel (dB) re 1 µPa (micropascal) at 1 m (NRC, 2003; Hildebrand, 2009), depending on factors such as ship type, load, and speed, and ship hull and propeller design. Studies of vessel noise show that it appears to increase background noise levels in the 71-224 Hz range by 10-13 dB (Hatch *et al.*, 2012; McKenna *et al*., 2012; Rolland e*t al*., 2012). PAM systems employ hydrophones towed in streamer cables approximately 500 m behind a vessel. Noise from water flow around the cables and from strumming of the cables themselves is also low-frequency and typically masks signals in the same range. Experienced PAM operators participating in a recent workshop (Thode *et al*., 2017) emphasized that a PAM operation could easily report no acoustic encounters, depending on species present, simply because background noise levels rendered any acoustic detection impossible. The same workshop report stated that a typical eight-element array towed 500 m behind a vessel could be expected to detect delphinids, sperm whales, and beaked whales at the required range, but not baleen whales, due to expected background noise levels (including seismic noise, vessel noise, and flow noise).

There are several additional reasons why we do not agree that use of PAM is warranted for 24-hour HRG surveys. While NMFS agrees that PAM can be an important tool for augmenting detection capabilities in certain circumstances, its utility in further reducing impact during HRG survey activities is limited. First, for this activity, the area expected to be ensonified above the Level B harassment threshold is relatively small (a maximum of 141 m); this reflects the fact that, to start with, the source level is comparatively low and the intensity of any resulting impacts would be lower level and, further, it means that inasmuch as PAM will only detect a portion of any animals exposed within a zone, the overall probability of PAM detecting an animal in the harassment zone is low. Together these factors support the limited value of PAM for use in reducing take with smaller zones. PAM is only capable of detecting animals that are actively vocalizing, while many marine mammal species vocalize infrequently or during certain activities, which means that only a subset of the animals within the range of the PAM would be detected (and potentially have reduced impacts). Additionally, localization and range detection can be challenging under certain scenarios. For example, odontocetes are fast moving and often travel in large or dispersed groups which makes localization difficult.

Given that the effects to marine mammals from the types of surveys authorized in this IHA are expected to be limited to low level behavioral harassment even in the absence of mitigation, the limited additional benefit anticipated by adding this detection method (especially for NARW and other low frequency cetaceans, species for which PAM has limited efficacy), and the cost and impracticability of implementing a full-time PAM program, we have determined the current requirements for visual monitoring are sufficient to ensure the least practicable adverse impact on the affected species or stocks and their habitat. NMFS has previously provided discussions on why PAM isn't a required monitoring measure during HRG survey IHAs in past **Federal Register** notices

(see 86 FR 21289, April 22, 2021; 87 FR 13975, March 11, 2022; 87 FR 24103; April 22, 2022 for examples).

Comment 12: LBI, Oceana, and COA all express concern regarding the potential for vessel strike and recommendations to reduce the potential for vessel strike. Oceana and COA recommended that NMFS restrict all vessels of all sizes associated with the proposed survey activities to speeds less than 10 knots (kn)(5.14 meters per second) at all times due to the risk of vessel strikes to NARWs and other large whales. Oceana and LBI both provide recommendations for additional mitigation measures, including a larger exclusion zone (from 500 m for NARWs and 100 m for all other species to 736 m from LBI and a suggestion of a 1,000 m Exclusion Zone for NARWs from Oceana); a prohibition of site characterization surveys at night unless a PAM system is employed; a 736 m buffer on the NARW's migratory corridor during primary migration months (January, February, March, April, and November), and the development of additional Seasonal Management Areas (SMAs) adjacent to the survey area to reduce against ship strike.

NMFS response: NMFS notes that the 500 m Exclusion Zone for NARWs exceeds the modeled distance to the largest 160 dB Level B harassment isopleth distance (141 m during sparker use) by a substantial margin. LBI does not provide a compelling rationale for why the Exclusion Zone should be even larger. Given that these surveys are relatively low impact and that, regardless, NMFS has prescribed a NARW Exclusion Zone that is significantly larger (500 m) than the conservatively estimated largest harassment zone (141 m), NMFS has determined that the Exclusion Zone is appropriate. Further, Level A harassment is not expected to result even in the absence of mitigation, given the characteristics of the sources planned for use. As described in the **Mitigation** section, NMFS has determined that the prescribed mitigation requirements are sufficient to effect the least practicable adverse impact on all affected species or stocks.

Regarding the recommendation for PAM usage, NMFS refers to the response provided for Comment #11.

LBI's recommendation to implement a 736 m buffer zone on the NARW migratory corridor is based on its own analysis using the a 15LogR transmission loss coefficient. Regarding assumptions related to transmission loss, we refer the reader to the response to Comment #3, which invalidates the premise that a larger zone is appropriate (as discussed previously). In addition, as previously stated, given the large size of the migratory corridor (BIA of 269,448 km^2) compared with the survey area (5,184 km^2), an additional buffer is unnecessary. This would unnecessarily slow down NEETMA's site characterization surveys, prolonging the duration of the survey effort to make up for the lost survey days.

While NMFS acknowledges that vessel strikes can result in injury or mortality, we have analyzed the potential for ship strike resulting from NEETMA's activities and have determined that based on the nature of the activity and the required mitigation measures specific to vessel strike avoidance included in the IHA, potential for vessel strike is so low as to be discountable. These mitigation measures, most of which were included in the proposed IHA and all of which are required in the final IHA, include: A requirement that all vessel operators comply with 10 kn (18.5 km/hour) or less speed restrictions in any SMA, DMA or Slow Zone while underway, and check daily for information regarding the establishment of mandatory or voluntary vessel strike avoidance areas (SMAs, DMAs, Slow Zones) and information regarding NARW sighting locations; a requirement that all vessels greater than or equal to 19.8 m in overall length operating from November 1 through April 30 operate at speeds of 10 kn (18.5 km/hour) or less; a requirement that all vessel operators reduce vessel speed to 10 kn (18.5 km/hour) or less when any large whale, any mother/calf pairs, pods, or large assemblages of non-delphinid cetaceans are observed near the vessel; a requirement that all survey

vessels maintain a separation distance of 500 m or greater from any ESA-listed whales or other unidentified large marine mammals visible at the surface while underway; a requirement that, if underway, vessels must steer a course away from any sighted ESA-listed whale at 10 kn(5.14 m/s) or less until the 500 m minimum separation distance has been established; a requirement that, if an ESA-listed whale is sighted in a vessel's path, or within 500 m of an underway vessel, the underway vessel must reduce speed and shift the engine to neutral; a requirement that all vessels underway must maintain a minimum separation distance of 100 m from all non-ESA-listed baleen whales; and a requirement that all vessels underway must, to the maximum extent practicable, attempt to maintain a minimum separation distance of 50 m from all other marine mammals, with an understanding that at times this may not be possible (*e.g.*, for animals that approach the vessel). We have determined that the ship strike avoidance measures in the IHA are sufficient to ensure the least practicable adverse impact on species or stocks and their habitat. Furthermore, no documented vessel strikes have occurred for any marine site characterization surveys which were issued IHAs from NMFS during the survey activities themselves or while transiting to and from survey sites. Existing and permanent SMAs have been previously established under a different rulemaking (73 FR 60173; October 10, 2008) and can also be found on NMFS' website at *https://www.fisheries.noaa.gov/national/endangered-species-conservation/reducing-vessel-strikes-north-atlantic-right-whales#speedlimit*).

Comment 13: LBI asserts that NMFS has not complied with the Endangered Species Act (ESA) through the use of the NMFS Greater Atlantic Regional Office (GARFO) Programmatic Consultation regarding geophysical surveys along the U.S. Atlantic coast in the three Atlantic Renewable Energy Regions (*https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-take-*

reporting-programmatics-greater-atlantic#offshore-wind-site-assessment-and-site-characterization-activities-programmatic-consultation).

NMFS response: NMFS disagrees with LBI's assertion that NMFS has not complied with ESA section 7. LBI suggests that a BiOp is required, and that because GARFO's programmatic consultation is not a BiOp, NMFS is not compliant with the requirements of Section 7. LBI misunderstands the relevant legal requirements, as an informal consultation concluding that the effects of an action are not likely to adversely affect ESA-listed species (as GARFO's consultation document does) is a sufficient endpoint of consultation under section 7. LBI's additional complaints regarding GARFO's analysis are misdirected.

Comment 14: LBI has stated its opposition to the use of a categorical exclusion under NEPA, asserting that, at minimum, an EA is the appropriate level of review.

NMFS response: NMFS does not agree with LBI's comment. A categorical exclusion (CE) is a category of actions that an agency has determined does not individually or cumulatively have a significant effect on the quality of the human environment, and is appropriately applied for such categories of actions so long as there are no extraordinary circumstances present that would indicate that the effects of the action may be significant. Extraordinary circumstances are situations for which NOAA has determined further NEPA analysis is required because they are circumstances in which a normally excluded action may have significant effects. A determination of whether an action that is normally excluded requires additional evaluation because of extraordinary circumstances focuses on the action's potential effects and considers the significance of those effects in terms of both context (consideration of the affected region, interests, and resources) and intensity (severity of impacts). Potential extraordinary circumstances relevant to this action include (1) adverse effects on species or habitats protected by the MMPA that are not negligible; (2) highly controversial

environmental effects; (3) environmental effects that are uncertain, unique, or unknown; and (4) the potential for significant cumulative impacts when the proposed action is combined with other past, present, and reasonably foreseeable future actions.

The relevant NOAA CE associated with issuance of incidental take authorizations is CE B4, "Issuance of incidental harassment authorizations under section 101(a)(5)(A) and (D) of the MMPA for the incidental, but not intentional, take by harassment of marine mammals during specified activities and for which no serious injury or mortality is anticipated." This action falls within CE B4. In determining whether a CE is appropriate for a given incidental take authorization, NMFS considers the applicant's specified activity and the potential extent and magnitude of takes of marine mammals associated with that activity along with the extraordinary circumstances listed in the Companion Manual for NAO 216-6A and summarized previously. The evaluation of whether extraordinary circumstances (if present) have the potential for significant environmental effects is limited to the decision NMFS is responsible for, which is issuance of the incidental take authorization. While there may be environmental effects associated with the underlying action, potential effects of NMFS' action are limited to those that would occur due to the authorization of incidental take of marine mammals. NMFS prepared numerous EA) analyzing the environmental impacts of the categories of activities encompassed by CE B4 which resulted in Findings of No Significant Impacts (FONSIs) and, in particular, numerous EAs prepared in support of issuance of IHAs related to similar survey actions are part of NMFS' administrative record supporting CE B4. These EAs demonstrate the issuance of a given incidental harassment authorization does not affect other aspects of the human environment because the action only affects the marine mammals that are the subject of the incidental harassment authorization. These EAs also addressed factors in 40 CFR 1508.27 regarding the potential for significant impacts and demonstrate the issuance of incidental harassment authorization

for the categories of activities encompassed by CE B4 do not individually or cumulatively have a significant effect on the human environment.

Specifically for this action, NMFS independently evaluated the use of the CE for issuance of NEETMA's IHA, which included consideration of extraordinary circumstances. As part of that analysis, NMFS considered including whether this IHA issuance would result in cumulative impacts that could be significant. In particular, the issuance of an IHA to NEETMA is expected to result in minor, short-term behavioral effects on marine mammal species due to exposure to underwater sound from site characterization survey activities. Behavioral disturbance is expected to occur intermittently in the vicinity of NEETMA's survey area during the one-year timeframe. Level B harassment will be reduced through use of mitigation measures described herein. Additionally, as discussed elsewhere, NMFS has determined that NEETMA's activities fall within the scope of activities analyzed in GARFO's programmatic consultation regarding geophysical surveys along the U.S. Atlantic coast in the three Atlantic Renewable Energy Regions (completed June 29, 2021; revised September 2021), which concluded surveys such as those planned by NEETMA are not likely to adversely affect endangered listed species or adversely modify or destroy critical habitat. Accordingly, NMFS has determined that the issuance of this IHA will result in no more than negligible (as that term is defined by the Companion Manual for NAO 216-6A) adverse effects on species protected by the ESA and the MMPA.

Further, the issuance of this IHA will not result in highly controversial environmental effects or result in environmental effects that are uncertain, unique, or unknown because numerous entities have been engaged in site characterization surveys that result in Level B harassment of marine mammals in the United States. This type of activity is well documented; prior authorizations and analysis demonstrates issuance of an IHA for this type of action only affects the marine mammals that are the subject of the

specific authorization and, thus, no potential for significant cumulative impacts are expected, regardless of past, present, or reasonably foreseeable actions, even though the impacts of the action may not be significant by itself. Based on this evaluation, we concluded that the issuance of the IHA qualifies to be categorically excluded from further NEPA review.

Comment 15: LBI requests that NMFS conduct an analysis and submit a Federal consistency determination to the State of New Jersey pursuant to the Coastal Zone Management Act (CZMA), if NMFS had not done so already. Referencing a March 2015 consistency determination issued by the New Jersey Department of Environmental Protection (NJDEP) involving a separate and unrelated proposed marine geophysical survey in the Atlantic Ocean off the Coast of New Jersey, LBI expressed concern that the survey proposed by NEETMA may not be consistent with New Jersey Coastal Zone Management rules.

NMFS response: NMFS cannot submit a Federal consistency determination to the State of New Jersey, because this activity is not a Federal agency activity proposed by NMFS under NOAA's CZMA regulations at 15 CFR part 930, subpart C. Rather, NMFS is reviewing an application for a Federal authorization for NEETMA's proposed survey. As such, whether a CZMA review is required is determined by the regulations governing CZMA Federal consistency review of Federal license or permit activities found at 15 CFR part 930, subpart D. If an applicant for a Federal license or permit activity is not required by 15 CFR part 930, subpart D to submit a CZMA consistency certification to a state, then the authorizing Federal agency, in this case, NMFS cannot compel or require the applicant to submit a consistency certification.

In this case, NEETMA was not, and is not, required to submit a CZMA consistency certification to the State of New Jersey under 15 CFR part 930, subpart D, because NMFS MMPA IHAs are not, pursuant to 15 CFR 930.53, listed in New Jersey's

federally-approved coastal management program and New Jersey has not described a geographic location in Federal waters for the NMFS authorization. In addition, the State of New Jersey did not request approval from the Director of NOAA's Office for Coastal Management (formerly known as the Office of Ocean and Coastal Resource Management) to review NEETMA's application to NMFS as an unlisted activity pursuant to 15 CFR 930.54, and the time period to make such a request has passed. Regarding the CZMA Federal consistency unlisted activity review request process under 15 CFR 930.54, NMFS published its **Federal Register** notice for NEETMA's MMPA IHA application on May 9, 2022. The State of New Jersey then had 30 days to notify NEETMA, NMFS and the Director of NOAA's Office for Coastal Management that it was seeking approval to review the activity as an unlisted activity. The State of New Jersey did not make such a request and the 30-day period ended on June 8, 2022. Accordingly, NEETMA's IHA application is not subject to Federal consistency review under the CZMA and NMFS denies LBI's request.

Comment 16: Oceana made comments objecting to NMFS' renewal process regarding the extension of any one-year IHA with a 15-day public comment period, and suggested a 30-day public comment period is necessary for any renewal request.

NMFS response: NMFS' IHA renewal process meets all statutory requirements. In prior responses to comments about IHA renewals (*e.g.*, 84 FR 52464; October 2, 2019 and 85 FR 53342; August 28, 2020), NMFS has explained how the renewal process, as implemented, is consistent with the statutory requirements contained in section 101(a)(5)(D) of the MMPA, and further, promotes NMFS' goals of improving conservation of marine mammals and increasing efficiency in the MMPA compliance process. Therefore, we intend to continue implementing the renewal process.

In particular, we emphasize that any renewal IHA does have a 30-day public comment period associated with initial issuance of the IHA, and accordingly each

renewal IHA is made available for a total 45-day public comment period. The notice of the proposed IHA published in the **Federal Register** on May 9, 2022 (87 FR 27575) made clear that NMFS was seeking comment on the proposed IHA and the potential issuance of a renewal for this survey. As detailed in the **Federal Register** notice for the proposed IHA and on the agency's website, any renewal is limited to another year of identical or nearly identical activities in the same location or the same activities that were not completed within the 1-year period of the initial IHA. NMFS' analysis of the anticipated impacts on marine mammals caused by the applicant's activities covers both the Initial IHA period and the possibility of a 1-year renewal. Therefore a member of the public considering commenting on a proposed initial IHA also knows the scope of activities (or subset of activities) that would be included in a proposed renewal IHA, the potential impacts of those activities, the maximum amount and type of take that could be caused by those activities, the mitigation and monitoring measures that would be required, and the basis for the agency's negligible impact determinations, least practicable adverse impact findings, small numbers findings, and (if applicable) the no unmitigable adverse impact on subsistence use finding -- all the information needed to provide complete and meaningful comments on a possible renewal at the time of considering the proposed initial IHA. Reviewers have the information needed to meaningfully comment on both the immediate proposed IHA and a possible 1-year renewal, should the IHA holder choose to request one.

While there would be additional documents submitted with a renewal request, for a qualifying renewal these would be limited to documentation that NMFS would make available and use to verify that the activities are the same as those in the initial IHA, are nearly identical such that the changes would have either no effect on impacts to marine mammals or would decrease those impacts, or are a subset of activities already analyzed and authorized but not completed under the initial IHA. NMFS would also need to

confirm, among other things, that the activities would occur in the same location; involve the same species and stocks; provide for continuation of the same mitigation, monitoring, and reporting requirements; and that no new information has been received that would alter the prior analysis. The renewal request would also contain a preliminary monitoring report, in order to verify that effects from the activities do not indicate impacts of a scale or nature not previously analyzed. The additional 15-day public comment period, which includes NMFS' direct notice to anyone who commented on the proposed initial IHA, provides the public an opportunity to review these few documents, provide any additional pertinent information, and comment on whether they think the criteria for a renewal have been met. Between the initial 30-day comment period on these same activities and the additional 15 days, the total comment period for a renewal is 45 days.

In addition to the IHA renewal process being consistent with all requirements under section 101(a)(5)(D), it is also consistent with Congress' intent for issuance of IHAs to the extent reflected in statements in the legislative history of the MMPA. Through the provision for renewals in the regulations, description of the process and express invitation to comment on specific potential renewals in the Request for Public Comments section of each proposed IHA, the description of the process on NMFS' website, further elaboration on the process through responses to comments such as these, posting of substantive documents on the agency's website, and provision of 30 or 45 days for public review and comment on all proposed initial IHAs and Renewals respectively, NMFS has ensured that the public is "invited and encouraged to participate fully in the agency's decision-making process", as Congress intended.

Comment 17: Oceana and COA remarked that NMFS must utilize the best available science. The commenters further suggest that NMFS has not done so, specifically, referencing information regarding the NARW such as updated population estimates and recent habitat usage patterns in NEETMA's survey area. The commenters

specifically asserted that NMFS is not using the best available science with regards to the NARW population estimate and state that NMFS should be using the 336 estimate presented in the recent North Atlantic Right Whale Report Card (*https://www.narwc.org/report-cards.html*).

NMFS response: While NMFS agrees that the best available science should be used for assessing NARW abundance estimates, we disagree that the North Atlantic Right Whale Report Card (*i.e.*, Pettis *et al.* (2022)) study represents the most recent and best available estimate for NARW abundance. Rather the revised abundance estimate (368; 95 percent with a confidence interval of 356-378) published by Pace (2021) (and subsequently included in the 2021 draft Stock Assessment Reports (SARs; *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports*)), which was used in the proposed IHA, provides the most recent and best available estimate, and introduced improvements to NMFS' right whale abundance model. Specifically, Pace (2021) looked at a different way of characterizing annual estimates of age-specific survival. NMFS considered all relevant information regarding NARW, including the information cited by the commenters. However, NMFS relies on the SAR. Recently (after publication of the notice of proposed IHA), NMFS has updated its species web page to recognize the population estimate for NARWs is now below 350 animals (*https://www.fisheries.noaa.gov/species/north-atlantic-right-whale*). (See the footnote under Table 3 in the proposed **Federal Register** notice (87 FR 27575; May 9, 2022)). We anticipate that this information will be presented in the draft 2022 SAR. We note that this change in abundance estimate would not change our analysis regarding the estimated take of NARWs, nor affect our ability to make the required findings under the MMPA for NEETMA's survey activities.

NMFS further notes that Oceana seems to be conflating the phrase “best available data” with “the most recent data.” The MMPA specifies that the “best available data”

must be used, which does not always mean the most recent. As is NMFS' prerogative, we referenced the best available NARW abundance estimate of 368 from the draft 2021 SARs as NMFS's determination of the best available data that we relied on in our analysis. The Pace (2021) results strengthened the case for a change in mean survival rates after 2010-2011, but did not significantly change other current estimates (population size, number of new animals, adult female survival) derived from the model. Furthermore, NMFS notes that the draft SARs are peer reviewed by other scientific review groups prior to being finalized and published and that the North Atlantic Right Whale Report Card (Pettis *et al.*, 2022) does not undertake this process.

The commenters also noted their concern regarding NARW habitat usage, stating that NMFS was not appropriately considering relevant information on this topic. While this survey specifically intersects a portion of migratory habitat for NARWs, year-round "core" NARW foraging habitat (Oleson *et al*., 2020) is located much further north in the southern area of Martha's Vineyard and Nantucket Islands, where both visual and acoustic detections of NARWs indicate a nearly year-round presence (Oleson *et al*., 2020). NMFS notes that prey for NARWs are mobile and broadly distributed throughout the survey area; therefore, NARW foraging efforts are not likely to be disturbed given the location of these planned activities in relation to the broader area that NARWs migrate through and the northern areas where NARWs primarily forage. There is ample foraging habitat further north of this survey area that will not be ensonified by the acoustic sources used by NEETMA, such as in the Great South Channel and Georges Bank Shelf Break feeding BIA. Furthermore, and as discussed in the proposed Notice (87 FR 27575; May 9, 2022), the spatial acoustic footprint of the survey is very small relative to the spatial extent of the available foraging habitat.

Lastly, as we stated in the Notice announcing the proposed IHA, any impacts to marine mammals are expected to be temporary and minor and, given the relative size of

the survey area compared to the overall migratory route leading to foraging habitat (which is not affected by the specified activity). Comparatively, the survey area is approximately 5,184 km^2 and the NARW migratory BIA is 269,448 km^2. Because of this, and in context of the minor, low-level nature of the impacts expected to result from the planned survey, such impacts are not expected to result in disruption to biologically important behaviors.

Comment 18: Oceana noted that chronic stressors are an emerging concern for NARW conservation and recovery, and stated that chronic stress may result in energetic effects for NARWs. Oceana suggested that NMFS has not fully considered both the use of the area and the effects of both acute and chronic stressors on the health and fitness of NARWs, as disturbance responses in NARWs could lead to chronic stress or habitat displacement, leading to an overall decline in their health and fitness.

NMFS response: NMFS agrees with Oceana that both acute and chronic stressors are of concern for NARW conservation and recovery. We recognize that acute stress from acoustic exposure is one potential impact of these surveys, and that chronic stress can have fitness, reproductive, etc. impacts at the population-level scale. NMFS has carefully reviewed the best available scientific information in assessing impacts to marine mammals, and recognizes that the surveys have the potential to impact marine mammals through behavioral effects, stress responses, and auditory masking. However, NMFS does not expect that the generally short-term, intermittent, and transitory marine site characterization survey activities planned by NEETMA would create conditions of acute or chronic acoustic exposure leading to long-term physiological stress responses in marine mammals. NMFS has also prescribed a robust suite of mitigation measures, including extended distance shutdowns for NARW, that are expected to further reduce the duration and intensity of acoustic exposure, while limiting the potential severity of any possible behavioral disruption. The potential for chronic stress was evaluated in

making the determinations presented in NMFS's negligible impact analyses. Because NARWs generally use this location in a transitory manner, specifically for migration, any potential impacts from these surveys are lessened for other behaviors due to the brief periods where exposure is possible. In context of these expected low-level impacts, which are not expected to meaningfully affect important behavior, we also refer again to the large size of the migratory corridor (BIA of 269,448 km^2) compared with the survey area (5,184 km^2). Thus, the transitory nature of NARWs at this location means it is unlikely for any exposure to cause chronic effects as NEETMA's planned survey area and ensonified zones are much smaller than the overall migratory corridor. Because of this, NMFS does not expect acute or cumulative stress to be a detrimental factor to NARWs from NEETMA's described survey activities.

Comment 19: Oceana states that NMFS must make an assessment of which activities, technologies and strategies are truly necessary to provide information to inform site characterization surveys and which are not critical, asserting that NMFS should prescribe the appropriate survey techniques. In general, Oceana stated that NMFS must require that all IHA applicants minimize the impacts of underwater noise to the fullest extent feasible, including through the use of best available technology and methods to minimize sound levels from geophysical surveys.

NMFS response: The MMPA requires that an IHA include measures that will effect the least practicable adverse impact on the affected species and stocks and NMFS agrees that the IHA should include conditions for the survey activities that will first avoid adverse effects on NARWs in and around the survey site, where practicable, and then minimize the effects that cannot be avoided. NMFS has determined that the IHA meets this requirement to effect the least practicable adverse impact. Oceana does not make any specific recommendations of measures to add to the IHA. As part of the analysis for all marine site characterization survey IHAs, NMFS evaluates the effects expected as a

result of the specified activity, makes the necessary findings, and prescribes mitigation requirements sufficient to achieve the least practicable adverse impact on the affected species and stocks of marine mammals. It is not within NMFS' purview to make judgments regarding what may be appropriate techniques or technologies for an operator's survey objectives.

Comment 20: Oceana has requested NMFS prepare a vessel traffic plan on the basis that the site characterization surveys will increase the vessel traffic in and around the project area.

NMFS response: NMFS disagrees that vessel traffic would increase significantly to a level where adverse impacts would occur to marine mammals in and around NEETMA's survey site. NEETMA anticipates the use of up to three concurrently operating survey vessels during the entire effective period of the IHA, over the approximate survey area of 5,183.97 km^2. Due to the size of the planned survey area and the small number of vessels expected to be operating specifically relating to NEETMA's project, NMFS considers it highly unlikely that this level of additional vessels would increase the risk to the species in and around the area.

Furthermore, NEETMA did not request authorization for take incidental to vessel traffic during their site characterization surveys. Nevertheless, NMFS analyzed the potential for vessel strikes to occur during the survey, and determined that the potential for vessel strike is so low as to be discountable. NMFS does not authorize any take of marine mammals incidental to vessel strike resulting from the survey. If NEETMA were to strike a marine mammal with a vessel, this would be an unauthorized take and be in violation of the MMPA. This gives NEETMA a strong incentive to operate its vessels with all due caution and to effectively implement the suite of vessel strike avoidance measures called for in the IHA. NEETMA proposed a very conservative suite of mitigation measures related to vessel strike avoidance, including measures specifically

designed to avoid impacts to NARWs. Section 4(f) in the IHA contains a suite of non-discretionary requirements pertaining to ship strike avoidance, including vessel operation protocols and monitoring. To date, NMFS is not aware of site characterization vessel from surveys reporting a ship strike within the United States. When considered in the context of low overall probability of any vessel strike by NEETMA vessels, given the limited additional survey-related vessel traffic relative to existing traffic in the survey area, the comprehensive visual monitoring, and other additional mitigation measures described herein, NMFS believes these measures are sufficiently protective to avoid ship strike. These measures are described fully in the **Mitigation** section below, and include, but are not limited to: Training for all vessel observers and captains, daily monitoring of NARW Sighting Advisory System, WhaleAlert app, and USCG Channel 16 for situational awareness regarding NARW presence in the survey area, communication protocols if whales are observed by any NEETMA personnel, vessel operational protocol should any marine mammal be observed, and visual monitoring.

Comment 21: Oceana suggests that protected species observers (PSOs) complement their survey efforts using additional technologies, such as infrared detection devices when in low-light conditions.

NMFS response: NMFS agrees with Oceana regarding this suggestion and a requirement to utilize a thermal (infrared) device during low-light conditions was included in the proposed **Federal Register** notice. That requirement is included as a requirement of the issued IHA.

Comment 22: Oceana suggests that NMFS require vessels maintain a separation distance of at least 500 m from NARWs at all times.

NMFS response: NMFS agrees with Oceana regarding this suggestion and a requirement to maintain a separation distance of at least 500 m from NARWs at all times

was included in the proposed **Federal Register** notice and was included as a requirement in the issued IHA.

Comment 23: Oceana recommended that the IHA should require all vessels supporting site characterization to be equipped with and using Class A Automatic Identification System (AIS) devices at all times while on the water. Oceana suggested this requirement should apply to all vessels, regardless of size, associated with the survey.

NMFS response: NMFS is generally supportive of the idea that vessels involved with survey activities be equipped with and using Class A Automatic Identification System (devices) at all times while on the water. Indeed, there is a precedent for NMFS requiring such a stipulation for geophysical surveys in the Atlantic Ocean (38 FR 63268, December 7, 2018); however, those activities carried the potential for much more significant impacts than the marine site characterization surveys to be carried out by NEETMA, with the potential for both Level A and Level B harassment take. Given the small isopleths and small numbers of take authorized by this IHA, NMFS does not agree that the benefits of requiring AIS on all vessels associated with the survey activities outweighs and warrants the cost and practicability issues associated with this requirement.

Comment 24: Oceana asserts that the IHA must include requirements to hold all vessels associated with site characterization surveys accountable to the IHA requirements, including vessels owned by the developer, contractors, employees, and others regardless of ownership, operator, and contract. They state that exceptions and exemptions will create enforcement uncertainty and incentives to evade regulations through reclassification and redesignation. They recommend that NMFS simplify this by requiring all vessels to abide by the same requirements, regardless of size, ownership, function, contract or other specifics.

NMFS response: NMFS agrees with Oceana and required these measures in the proposed IHA and final IHA. The IHA requires that a copy of the IHA must be in the possession of NEETMA, the vessel operators, the lead PSO, and any other relevant designees of NEETMA carrying out activities subject to this IHA. The IHA also states that NEETMA must ensure that the vessel operator and other relevant vessel personnel, including the PSO team, are briefed on all responsibilities, communication procedures, marine mammal monitoring protocols, operational procedures, and IHA requirements prior to the start of survey activity, and when relevant new personnel join the survey operations.

Comment 25: Oceana stated that the IHA must include a requirement for all phases of the NEETMA's site characterization to subscribe to the highest level of transparency, including frequent reporting to Federal agencies, requirements to report all visual and acoustic detections of NARWs and any dead, injured, or entangled marine mammals to NMFS or the Coast Guard as soon as possible and no later than the end of the PSO shift. Oceana states that to foster stakeholder relationships and allow public engagement and oversight of the permitting, the IHA should require all reports and data to be accessible on a publicly available website

NMFS response: NMFS agrees with the need for reporting and indeed, the MMPA calls for IHAs to incorporate reporting requirements. As included in the proposed IHA, the final IHA includes requirements for reporting that supports Oceana's recommendations. NEETMA is required to submit a monitoring report to NMFS within 90 days after completion of survey activities that fully documents the methods and monitoring protocols, summarizes the data recorded during monitoring, and describes, assesses and compares the effectiveness of monitoring and mitigation measures. PSO datasheets or raw sightings data must also be provided with the draft and final monitoring report. Further the draft IHA and final IHA stipulate that if a NARW is observed at any

time by any survey vessels, during surveys or during vessel transit, NEETMA must immediately report sighting information to the NMFS North Atlantic Right Whale Sighting Advisory System and to the U.S. Coast Guard, and that any discoveries of injured or dead marine mammals be reported by Atlantic Shores to the Office of Protected Resources, NMFS, and to the New England/Mid-Atlantic Regional Stranding Coordinator as soon as feasible. All reports and associated data submitted to NMFS are included on the website for public inspection.

Comment 26: Oceana recommends a shutdown requirement if a NARW or other ESA-listed species is detected in the clearance zone as well as a publically available explanation of any exemptions as to why the applicant would not be able to shutdown in these situations.

NMFS response: There are several shutdown requirements described in the **Federal Register** notice of the proposed IHA (87 FR 27575; May 9, 2022), and which are included in the final IHA, including the stipulation that geophysical survey equipment must be immediately shut down if any marine mammal is observed within or entering the relevant Exclusion Zone while geophysical survey equipment is operational. There is no exemption for the shutdown requirement. In regards to reporting, NEETMA must notify NMFS if a NARW is observed at any time by any survey vessels during surveys or during vessel transit. Additionally, NEETMA is required to report the relevant survey activity information, such as such as the type of survey equipment in operation, acoustic source power output while in operation, and any other notes of significance (*i.e.*, pre-clearance survey, ramp-up, shutdown, end of operations, etc.) as well as the estimated distance to an animal and its heading relative to the survey vessel at the initial sighting and survey activity information. We note that if a right whale is detected within the Exclusion Zone before a shutdown is implemented, the right whale and its distance from the sound source, including if it is within the Level B harassment zone, would be reported

in NEETMA's final monitoring report and made publicly available on NMFS' website. NEETMA is required to immediately notify NMFS of any sightings of NARWs and report upon survey activity information. NMFS believes that these requirements address the commenter's concerns.

Comment 27: Oceana recommended that when HRG surveys are allowed to resume after a shutdown event, the surveys should be required to use a ramp-up procedure to encourage any nearby marine life to leave the area.

NMFS response: NMFS agrees with this recommendation and included in the **Federal Register** notice of the proposed IHA (87 FR 27575; May 9, 2022) and in this final IHA, which includes a stipulation that, when technically feasible, survey equipment must be ramped up at the start or restart of survey activities. Operators must ramp up sources to half power for 5 minutes and then proceed to full power. NMFS notes that ramp-up would not be required for short periods where acoustic sources were shut down (*i.e.*, less than 30 minutes) if PSOs have maintained constant visual observation and no detections of marine mammals occurred within the applicable exclusion zone (EZ).

Comment 28: COA is concerned regarding the number of species that could be impacted by the activities, as well as a lack of baseline data being available for species in the area. In addition, COA has stated that NMFS did not adequately address the potential for cumulative impacts to bottlenose dolphins from Level B harassment over several years of project activities.

NMFS response: We appreciate the concern expressed by COA. NMFS utilizes the best available science when analyzing which species may be impacted by an applicant's proposed activities. Based on information found in the scientific literature, as well as based on density models developed by Duke University, all marine mammal species included in the proposed **Federal Register** notice have some likelihood of occurring in NEETMA's survey areas. Furthermore, the MMPA requires us to evaluate

the effects of the specified activities in consideration of the best scientific evidence available and, if the necessary findings are made, to issue the requested take authorization. The MMPA does not allow us to delay decision making in hopes that additional information may become available in the future. Furthermore, NMFS notes that it has previously addressed discussions on cumulative impact analyses in previous comments and references COA back to these specific responses in this notice.

Regarding the lack of baseline information cited by COA, with specific concern pointed out for harbor seals, NMFS points towards two sources of information for marine mammal baseline information: the Ocean/Wind Power Ecological Baseline Studies, January 2008-December 2009 completed by the New Jersey Department of Environmental Protection in July 2010 (*https://dspace.njstatelib.org/xmlui/handle/10929/68435*) and the Atlantic Marine Assessment Program for Protected Species (AMAPPS; *https://www.fisheries.noaa.gov/new-england-mid-atlantic/population-assessments/atlantic-marine-assessment-program-protected*) with annual reports available from 2010 to 2020 (*https://www.fisheries.noaa.gov/resource/publication-database/atlantic-marine-assessment-program-protected-species*) that cover the areas across the Atlantic Ocean. NMFS has duly considered this and all available information.

Based on the information presented, NMFS has determined that no new information has become available, nor do the commenters present additional information, that would change our determinations since the publication of the proposed notice.

Description of Marine Mammals in the Area of Specified Activities

Sections 3 and 4 of NEETMA's application summarize the available information regarding status and trends, distribution and habitat preferences, and behavior and life history, of the potentially affected species. Additional information regarding population trends and threats may be found in NMFS' Stock Assessment Reports (SARs; *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-*

stock-assessments) and more general information about these species (*e.g.*, physical and behavioral descriptions) may be found on NMFS' website (*https://www.fisheries.noaa.gov/find-species)*.

Table 3 lists all species or stocks for which take is authorized for this action, and summarizes information related to the species or stock, including regulatory status under the MMPA and Endangered Species Act (ESA) and potential biological removal (PBR), where known. PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS' SARs). While no mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS' stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All stocks managed under the MMPA in this region are assessed in NMFS' U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessment Reports (SAR). NMFS has utilized the more recent SAR information (in this case, the draft 2021 U.S. Atlantic and Gulf of Mexico Marine Mammal SARs). All values presented in Table 3 are the most recent available at the time of publication (including from the draft 2021 SARs) and are available online at: *www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*).

Table 3. Marine Mammal Species Likely to Occur Near the Project Area That May Be Affected by NEETMA's Activity

Common name	Scientific name	Stock	ESA/MMPA status; strategic (Y/N)[1]	Stock abundance (CV, N min, most recent abundance survey)[2]	PBR	Annual M/SI[3]
Order Cetartiodactyla—Cetacea—Superfamily Mysticeti (baleen whales)						
North Atlantic right whale	*Eubalaena glacialis*	Western North Atlantic	E/D, Y	368 (0; 356; 2020)[5]	0.8	18.6
Fin whale	*Balaenoptera physalus*	Western North Atlantic	E/D, Y	6,802 (0.24; 5,573; 2016)	11	2.35
Humpback whale	*Megaptera novaengliae*	Gulf of Maine	-/-, Y	1,396 (0; 1,380; 2016)	22	12.15
Minke whale	*Balaenoptera acutorostrata*	Canadian East Coastal	-/-, N	21,968 (0.31; 17,002; 2016)	170	10.6
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Sperm whale	*Physeter macrocephalus*	North Atlantic	E/D, Y	4,349 (0.28; 3,451; 2016)	3.9	0
Risso's dolphin	*Grampus griseus*	Western North Atlantic	-/-, N	35,493 (0.19; 30,289; 2016)	303	54.3
Long-finned pilot whale	*Globicephala melas*	Western North Atlantic	-/-, N	39,215 (0.3; 30,627; 2016)	306	21
Short-finned pilot whale	*Globicephala macrorhynchus*	Western North Atlantic	-/-, Y	28,924 (0.24; 23,637, 2016)	236	136
Atlantic white-sided dolphin	*Lagenorhynchus acutus*	Western North Atlantic	-/-, N	93,233 (0.71; 54,443; 2016)	544	26
Common dolphin	*Delphinus delphis*	Western North Atlantic	-/-, Y	172,897 (0.21, 145,216, 2016)	526	399
Common bottlenose	*Tursiops truncatus*	Western North	-/-, N	62,851 (0.23;	519	28

dolphin		Atlantic – Offshore		51,914; 2016)		
		Western North Atlantic – Coastal Migratory	-/D, Y	6,639 (0.41; 4,759; 2016)	48	12.2 - 21.5
Atlantic spotted dolphin	*Stenella frontalis*	Western North Atlantic	-/-, N	39,921 (0.27; 32,032; 2016)	320	0
Harbor porpoise	*Phocoena*	Gulf of Maine/Bay of Fundy	-/-, N	95,543 (0.31; 74,034; 2016)	851	217
Order Carnivora—Superfamily Pinnipedia						
Harbor seal	*Phoca vitulina*	Western North Atlantic	-/-, N	75,834 (0.15; 66,884; 2012)	2006	350
Gray seal[4]	*Halichoerus grypus*	Western North Atlantic	-/-, N	27,131 (0.19; 23,158; 2016)	1389	4,729

[1] - ESA status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

[2] - NMFS marine mammal stock assessment reports online at: *www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*. CV is the coefficient of variation; N_{min} is the minimum estimate of stock abundance.

[3] - These values, found in NMFS' SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.,* commercial fisheries, ship strike).

[4] - NMFS' stock abundance estimate (and associated PBR value) applies to U.S. population only. Total stock abundance (including animals in Canada) is approximately 451,431. The annual M/SI value given is for the total stock.

[5] - The draft 2022 SARs have yet to be released; however, NMFS has updated its species webpage to recognize the population estimate for North Atlantic right whales is now below 350 animals (*https://www.fisheries.noaa.gov/species/north-atlantic-right-whale*)

A detailed description of the species likely to be affected by NEETMA's activities, including information regarding population trends and threats, and local occurrence, were provided in the **Federal Register** notice for the proposed IHA (87 FR 27575; May 9, 2022). Since that time, we are not aware of any changes in the status of these species and stocks or other relevant new information; therefore, detailed

descriptions are not provided here. Please refer to that **Federal Register** notice for those descriptions.

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Current data indicate that not all marine mammal species have equal hearing capabilities (*e.g.*, Richardson *et al.*, 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007) recommended that marine mammals be divided into functional hearing groups based on directly measured or estimated hearing ranges on the basis of available behavioral response data, audiograms derived using auditory evoked potential techniques, anatomical modeling, and other data. Note that no direct measurements of hearing ability have been successfully completed for mysticetes (*i.e.*, low-frequency cetaceans). Subsequently, NMFS (2018) described generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the approximately 65 decibel (dB) threshold from the normalized composite audiograms, with the exception for lower limits for low-frequency cetaceans where the lower bound was deemed to be biologically implausible and the lower bound from Southall *et al.* (2007) retained. Marine mammal hearing groups and their associated hearing ranges are provided in Table 4.

Table 4. Marine Mammal Hearing Groups (NMFS, 2018)

Hearing Group	Generalized Hearing Range[1]
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 35 kHz
Mid-frequency (MF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz
High-frequency (HF) cetaceans (true porpoises, *Kogia*, river dolphins, Cephalorhynchid, *Lagenorhynchus cruciger* & *L. australis*)	275 Hz to 160 kHz
Phocid pinnipeds (PW) (underwater) (true seals)	50 Hz to 86 kHz
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 39 kHz

1-Represents the generalized hearing range for the entire group as a composite (*i.e.,* all species within the group), where individual species' hearing ranges are typically not as broad. Generalized hearing range chosen based on ~65 dB threshold from normalized composite audiogram, with the exception for lower limits for LF cetaceans (Southall *et al.* 2007) and PW pinniped (approximation).

The pinniped functional hearing group was modified from Southall *et al*. (2007) on the basis of data indicating that phocid species have consistently demonstrated an extended frequency range of hearing compared to otariids, especially in the higher frequency range (Hemilä *et al*., 2006; Kastelein *et al*., 2009; Reichmuth and Holt, 2013).

For more detail concerning these groups and associated frequency ranges, please see NMFS (2018) for a review of available information.

Potential Effects of Specified Activities on Marine Mammals and their Habitat

The effects of underwater noise from the deployed acoustic sources have the potential to result in behavioral harassment of marine mammals in the vicinity of the study area. The **Federal Register** notice for the proposed IHA (87 FR 27575; May 9, 2022) included a discussion of the potential effects of the specified activity on marine mammals and their habitat, therefore that information is not repeated here; please refer to the **Federal Register** notice (87 FR 27575; May 9, 2022) for that information.

Estimated Take

This section provides an estimate of the number of incidental takes authorized through the IHA, which will inform both NMFS' consideration of "small numbers" and the negligible impact determination.

Harassment is the only type of take expected to result from these activities. Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines "harassment" as any act of pursuit, torment, or annoyance, which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

For this IHA, authorized takes are by Level B harassment only, in the form of disruption of behavioral patterns for individual marine mammals resulting from exposure to noise from certain HRG acoustic sources. Based primarily on the characteristics of the signals produced by the acoustic sources planned for use, Level A harassment is neither anticipated (even absent mitigation), nor authorized. Consideration of the anticipated effectiveness of the measures (*i.e.,* exclusion zones and shutdown measures), discussed in detail below in the **Mitigation** section, further strengthens the conclusion that Level A harassment is not a reasonably anticipated outcome of the survey activity. Furthermore and as previously described, no serious injury or mortality is anticipated or authorized for this activity. Below we describe how the take is estimated.

Generally speaking, we estimate take by considering: (1) acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) the number of days of activities. We note that while these factors can contribute to a basic calculation to provide an initial prediction of takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.,* previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the

authorized take numbers.

Acoustic Thresholds

NMFS uses acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals will be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur PTS of some degree (equated to Level A harassment).

Level B Harassment – Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source (*e.g*., frequency, predictability, duty cycle), the environment (*e.g.,* bathymetry), and the receiving animals (hearing, motivation, experience, demography, behavioral context) and can be difficult to predict (Southall *et al*., 2007; Ellison *et al*., 2012). NMFS uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS predicts that marine mammals may be behaviorally harassed (*i.e*., Level B harassment) when exposed to underwater anthropogenic noise above received levels of 160 dB re 1 µPa (rms) for the impulsive sources (*i.e*., boomers, sparkers) and non-impulsive, intermittent sources (*e.g*., CHIRP SBPs) evaluated here for NEETMA's survey activities.

Level A Harassment – NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0) (Technical Guidance, 2018) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). For more information, see NMFS' 2018 Technical Guidance, which may be accessed at *www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance*.

NEETMA's survey activities include the use of impulsive (*i.e.,* sparkers and boomers) and non-impulsive, intermittent (*e.g.*, CHIRP SBP) sources. These can be found in Table 2.

Ensonified Area

Here, we describe operational and environmental parameters of the activity that will feed into identifying the area ensonified above the acoustic thresholds, which include source levels and transmission loss coefficient.

NMFS has developed a user-friendly methodology for estimating the extent of the Level B harassment isopleths associated with relevant HRG survey equipment (NMFS, 2020). This methodology incorporates frequency and directionality to refine estimated ensonified zones. For acoustic sources that operate with different beamwidths, the maximum beamwidth was used, and the lowest frequency of the source was used when calculating the frequency-dependent absorption coefficient.

NMFS considers the data provided by Crocker and Fratantonio (2016) to represent the best available information on source levels associated with HRG equipment and, therefore, recommends that source levels provided by Crocker and Fratantonio (2016) be incorporated in the method described previously to estimate isopleth distances to harassment thresholds. In cases when the source level for a specific type of HRG equipment is not provided in Crocker and Fratantonio (2016), NMFS recommends that either the source levels provided by the manufacturer be used, or, in instances where source levels provided by the manufacturer are unavailable or unreliable, a proxy from Crocker and Fratantonio (2016) be used instead. Refer back to Table 2 to see the HRG equipment types that may be used during the planned surveys and the source levels associated with those HRG equipment types. Table 5 depicts the estimated Level B harassment isopleths for each acoustic source.

Table 5. Distances to Level B Harassment Threshold (160 dB rms)

Equipment Category	HRG Equipment	Distance to Level B harassment threshold in meters (m)
Shallow SBPs	ET 216 CHIRP	9
	ET 424 CHIRP	4
	GeoPulse 5430	21
	TB CHIRP III	48
Medium SBPs	AA, triple plate S-Boom (700-1,000 J)	34
	AA, Dura-spark UHD (500 J/400 tip	141
	AA, Dura-spark UHD 400+400	141
	GeoMarine Geo Spark 2000 (400 tip)	141

Results of modeling using the methodology described previously indicated that, of the HRG survey equipment planned for use by NEETMA that has the potential to result in Level B harassment of marine mammals, the Applied Acoustics Dura-Spark UHDs and GeoMarine Geo-Source sparkers will produce the largest Level B harassment isopleth (141 m). Estimated Level B harassment isopleths for all sources evaluated here, including the sparkers, are provided in Table 5. Although NEETMA does not expect to use sparker sources on all planned survey days, it assumed, for purposes of analysis, that the sparker will be used on all survey days. This is a conservative approach, as the actual sources used on individual survey days may produce smaller harassment distances.

Marine Mammal Occurrence

In this section we provide the information about the presence, density, or group dynamics of marine mammals that will inform the take calculations.

Habitat-based density models produced by the Duke University Marine Geospatial Ecology Laboratory and the Marine-life Data and Analysis Team, based on the best available marine mammal data from 1992-201 obtained in a collaboration between Duke University, the Northeast Regional Planning Body, the University of North Carolina Wilmington, the Virginia Aquarium and Marine Science Center, and NOAA (Roberts *et al*., 2016a; Curtice *et al*., 2018), represent the best available

information regarding marine mammal densities in the survey area. More recently, these data have been updated with new modeling results and include density estimates for pinnipeds (Roberts *et al*., 2016b, 2017, 2018).

The density data presented by Roberts *et al*. (2016b, 2017, 2018, 2020) incorporates aerial and shipboard line-transect survey data from NMFS and other organizations and incorporates data from eight physiographic and 16 dynamic oceanographic and biological covariates, and controls for the influence of sea state, group size, availability bias, and perception bias on the probability of making a sighting. These density models were originally developed for all cetacean taxa in the U.S. Atlantic (Roberts *et al*., 2016a). In subsequent years, certain models have been updated based on additional data as well as certain methodological improvements. More information is available online at *https://seamap.env.duke.edu/models/Duke/EC/.* Marine mammal density estimates in the survey area (animals/km^2) were obtained using the most recent model results for all taxa (Roberts *et al*., 2016b, 2017, 2018, 2020). The updated models incorporate additional sighting data, including sightings from NOAA's Atlantic Marine Assessment Program for Protected Species (AMAPPS) surveys.

For the exposure analysis, marine mammal density data from Roberts *et al*. (2016a, 2016b, 2017, 2018, 2020, 2021a, 2021b) were mapped for the survey area using a geographic information system (GIS). NEETMA used all 10 x 10 km (6.2 x 6.2 mile) grid cells (5 x 5 km (3.1 x 3.1 mile) for the North Atlantic right whale) where the centroid was within each survey area in developing estimated density values for each species. For data in which the Roberts *et al.* data does not provide outputs at the species level (*i.e.*, pilot whale *spp*. and pinnipeds) the single annual density was used. For all other species, the monthly densities were used to yield the average annual density. Bottlenose dolphin density estimates were also divided based on the specified stock.

In the Roberts *et al*. (2016b, 2017, 2018) models, species-specific delineations were not made for some marine mammals, including some pinniped species' (harbor seal and gray seal) and for pilot whale *spp.* (long-finned and short-finned). For pilot whales, both species are known to share similar habitat in the Project area, feed on similar prey, and have overlapping distributions (Mintzer *et al*., 2008; Rone and Pace, 2012). Hayes *et al*. (2017) noted a particular overlap between the two species between New Jersey and George's Bank. Furthermore, due to their similar appearances at sea and difficulty in distinguishing species-specific characteristics, observers are likely to combine sightings of pilot whales (Waring, 1993; Rone and Pace, 2012; Stepanuk *et al*., 2018).

Regarding the pinniped species, because the seasonality, feeding preferences, and habitat use by gray seals often overlaps with that of harbor seals in the survey areas, it was assumed that modeled takes of seals could occur to either of the respective species.

As discussed in the application, the single annual density for each marine mammal group (pilot whale *spp.* and pinnipeds) was applied and the results were divided between each species, resulting in an equal split based on the lack of evidence to support a different allocation.

For the bottlenose dolphin densities, Roberts *et al*. (2016b, 2017, 2018) does not differentiate by stock. The Western North Atlantic northern migratory coastal stock is generally expected to occur only in coastal waters from the shoreline to approximately the 20-m (65-ft) isobath (Hayes *et al*., 2018). Both of these stocks have the potential to occur in the Northern and Southern survey areas. To account for the potential for mixed stocks within the survey areas, the densities of the two stocks were apportioned based on the 20-m isobaths contour. Any grid cells in the Roberts *et al.* data that feel entirely inshore of the 20-m isobaths were assigned to the coastal migratory stock. Any grid cells that fell outside this 20-m isobaths were apportioned to the offshore stock.

Densities from both of the survey sites were averaged annually to provide a density estimate for each species; please see Table 6 for density values used in the exposure estimation process. Additional data regarding average group sizes from survey effort in the region was considered to ensure adequate take estimates are evaluated.

Table 6. Maximum Seasonal Marine Mammal Densities (Number of Animals per 100 km^2) in the Northern and Southern Survey Areas

Species groups	Marine Mammal Species	Stock	Mean Annual Density (Number of animals/100km^2) [a]	
			Northern Survey Area	Southern Survey Area
Cetaceans	North Atlantic right whale	Western North Atlantic	0.169	0.102
	Fin whale	Western North Atlantic	0.154	0.058
	Sperm whale	North Atlantic	0.017	0.002
	Humpback whale	Gulf of Maine	0.042	0.040
	Common minke whale	Canadian East Coast	0.044	0.010
	Risso's dolphin	Western North Atlantic	0.014	0.001
	Long-finned pilot whale	Western North Atlantic	0.108	0.005
	Short-finned pilot whale	Western North Atlantic	0.108	0.005
	Atlantic white-sided dolphin	Western North Atlantic	0.836	0.092
	Common dolphin (short-beaked)	Western North Atlantic	5.692	0.739
	Common bottlenose dolphin	Western North Atlantic – Offshore	2.616	8.158
		Western North Atlantic – Coastal Migratory	14.203	33.409
	Atlantic spotted dolphin	Western North Atlantic	0.129	0.004
	Harbor porpoise	Gulf of Maine/Bay of Fundy	3.012	0.874
Pinnipeds	Harbor seal	Western North Atlantic	1.690	1.226
	Gray seal	Western North Atlantic	1.690	1.226

[a] - All density data was derived from Roberts *et al.* (2016a, 2016b, 2017, 2018, 2020, 2021a, 2021b).

Take Calculation and Estimation

Here we describe how the information provided previously is brought together to produce a quantitative take estimate.

In order to estimate the number of marine mammals predicted to be exposed to sound levels that will result in harassment, radial distances to predicted isopleths corresponding to Level B harassment thresholds are calculated, as described previously. The maximum distance (*i.e.*, 141 m distance associated with the Medium SBPs) to the Level B harassment criterion and the estimated distance traveled per day by a given survey vessel (*i.e.*, 62 km (38.5 mi)) are then used to calculate the daily ensonified area, or zone of influence (ZOI) around the survey vessel.

NEETMA estimates that the surveys will achieve a maximum daily track line distance of 62 km per day (24-hour period). This distance accounts for the vessel traveling at approximately 4-knots and accounts for non-active survey periods. Based on the maximum estimated distance to the Level B harassment threshold of 141 m (refer back to Table 5) and the maximum estimated daily track line distance of 62 km across both survey sites, an area of 5,183.97 km^2 will be ensonified to the Level B harassment threshold during NEETMA's surveys (Table 7) based on the following formula:

$$Mobile\ Source\ ZOI = (Distance/day \times 2r) + \pi r^2$$

Where: Distance/day = the maximum distance a survey vessel could travel in a 24-hour period; and r = the maximum radial distance from a given sound source to the NOAA Level B harassment thresholds.

Table 7. ZOI for each type of representative HRG survey equipment

Equipment Type	Largest Harassment Isopleth in km (m); r	Distance/day in km	ZOI (km^2)
Shallow SBP	0.048 (48)	62	5.98

Medium SBP (sparker)	0.141 (141)		17.61

These calculated ZOIs were than input to yield the total ensonified area per day (in km^2), as shown in Table 8 below.

Table 8. HRG Survey Area Distances for NEETMA's Project

HRG Survey Equipment Type	Specific equipment used			Largest harassment isopleth; r (km)	Survey distances per day (km)[1]	Calculated ZOI per day (km^2)
Shallow SBP	TB CHIRP III			0.048	62	5.98
Medium (SBP)	AA, Dura-spark UHD (500 J/400 tip)	AA, Dura-spark UHD 400+400	GeoMarine Geo Spark 2000 (400 tip)	0.141		17.61

[1] - Assumes 24-hours of survey activity during the Project.

As described previously, this is a conservative estimate as it assumes the HRG source that results in the greatest isopleth distance to the Level B harassment threshold will be operated at all times during the entire survey, which may not ultimately occur.

The number of marine mammals expected to be incidentally taken per day is then calculated by estimating the number of each species predicted to occur within the daily ensonified area (animals/km^2), incorporating the maximum seasonal estimated marine mammal densities as described previously. Estimated numbers of each species taken per day across both survey sites are then multiplied by the total number of survey days (*i.e.*, 320). The product is then rounded, to generate an estimate of the total number of instances of harassment expected for each species over the duration of the survey. A summary of this method is illustrated in the following formula with the resulting authorized take of marine mammals shown in Table 9:

$$Estimated\ Take = D \times ZOI \times \#\ of\ days$$

Where: D = average species density (per km^2); and ZOI = maximum daily ensonified area to relevant thresholds.

Table 9. Total Authorized Takes by Level B Harassment and Percent of Population/Stock for NEETMA's Project

Marine Mammal Species	Stock	Calculated Level B take		Authorized Level B take	
		Northern Survey Area	Southern Survey Area	Total Authorized [a]	% stock [c]
North Atlantic right whale	Western North Atlantic	7.40	0.83	8	2.17
Fin whale	Western North Atlantic	6.73	0.47	7	0.10
Sperm whale	North Atlantic	0.73	0.02	3	0.07
Humpback whale	Gulf of Maine	1.83	0.33	3 (6)[b]	0.21 (0.43)[b]
Common minke whale	Canadian East Coast	1.92	0.08	2	0.01
Risso's dolphin	Western North Atlantic	0.62	0.01	30	0.09
Long-finned pilot whale	Western North Atlantic	4.72	0.04	20	0.05
Short-finned pilot whale	Western North Atlantic	4.72	0.04	20	0.07
Atlantic white-sided dolphin	Western North Atlantic	36.52	0.76	37	0.04
Common dolphin (short-beaked)	Western North Atlantic	248.52	6.04	255	0.15
Common bottlenose dolphin	Western North Atlantic – Offshore	53.88	9.27	63	0.10
	Western North Atlantic – Coastal Migratory	325.25	235.27	561	8.45
Atlantic spotted dolphin	Western North Atlantic	5.61	0.03	100	0.25
Harbor porpoise	Gulf of Maine/Bay of Fundy	131.51	7.15	139	0.15
Harbor seal	Western North Atlantic	73.77	10.02	84	0.14
Gray seal	Western North Atlantic	73.77	10.02	84	0.31

[a] – All of these values were requested by NEETMA, with exception for the value in parenthesis found for humpback whales.
[b] – The values in parenthesis were a proposed adjustment by NMFS based on a proposed adjustment to account for higher recorded occurrences of humpback whales in the New York Bight area (see King *et al*., 2021).
[c] - Calculated percentages of population/stock were based on the population estimates (Nest) found in the NMFS's draft 2021 U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessment on NMFS's website (*https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports*).

Adjustments were made for sperm whales (Barkaszi and Kelly, 2019), Risso's dolphin (Baird *et al*., 1991; Barkaszi and Kelly, 2019), pilot whales *spp.*(CETAP, 1982), and Atlantic spotted dolphins (Jefferson *et al*., 2008) based on typical group sizes due to estimated takes lower than the predicted group size. The take numbers shown in Table 9 represent those originally calculated and requested by NEETMA with minor modifications adjusted by NMFS for one species.

Based on recent information from King *et al*. (2021) that demonstrated that the humpback whale is commonly sighted along the New York Bight area, NMFS determined that the humpback whale take request may be too low given the occurrence of animals near the survey area. Because of this, NMFS has increased the requested take to account for underestimates to the actual occurrence of this species within the density data.

Mitigation

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for certain subsistence uses (latter not applicable for this action). NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other

means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, we carefully consider two primary factors:

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat. This considers the nature of the potential adverse impact being mitigated (likelihood, scope, range). It further considers the likelihood that the measure will be effective if implemented (probability of accomplishing the mitigating result if implemented as planned), the likelihood of effective implementation (probability implemented as planned), and;

(2) The practicability of the measures for applicant implementation, which may consider such things as cost and impact on operations.

Mitigation for Marine Mammals and their Habitat

NMFS requires that the following mitigation measures be implemented during NEETMA's marine site characterization surveys. Pursuant to Section 7 of the ESA, NEETMA will also be required to adhere to relevant Project Design Criteria (PDC) of the NMFS' Greater Atlantic Regional Fisheries Office (GARFO) programmatic consultation (specifically PDCs 4, 5, and 7) regarding geophysical surveys along the U.S. Atlantic coast (*https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-take-reporting-programmatics-greater-atlantic#offshore-wind-site-assessment-and-site-characterization-activities-programmatic-consultation*).

Marine Mammal Exclusion Zones and Harassment Zones

Marine mammal EZs will be established around the HRG survey equipment and monitored by NMFS-approved PSOs:

- 500 m EZ for North Atlantic right whales during use of specified acoustic sources (sparkers, boomers, and non-parametric sub-bottom profilers).
- 100 m EZ for all other marine mammals, with certain exceptions specified below, during operation of impulsive acoustic sources (boomer and/or sparker).

If a marine mammal is detected approaching or entering the EZs during the HRG survey, the vessel operator will adhere to the shutdown procedures described below to minimize noise impacts on the animals. These stated requirements will be included in the site-specific training to be provided to the survey team.

Pre-Start Clearance

Marine mammal clearance zones will be established around the HRG survey equipment and monitored by PSOs:

- 500 m for all ESA-listed marine mammals; and,
- 100 m for all other marine mammals.

NEETMA will implement a 30-minute pre-start clearance period prior to the initiation of ramp-up of specified HRG equipment (see exception to this requirement in the Shutdown Procedures section below). During this period, clearance zones will be monitored by the PSOs, using the appropriate visual technology. Ramp-up may not be initiated if any marine mammal(s) is within its respective clearance zone. If a marine mammal is observed within a clearance zone during the pre-start clearance period, ramp-up may not begin until the animal(s) has been observed exiting its respective exclusion zone or until an additional time period has elapsed with no further sighting (*i.e.*, 15 minutes for small odontocetes and seals, and 30 minutes for all other species).

Ramp-Up of Survey Equipment

A ramp-up procedure, involving a gradual increase in source level output, is required at all times as part of the activation of the acoustic source when technically feasible. The ramp-up procedure will be used at the beginning of HRG survey activities

in order to provide additional protection to marine mammals near the survey area by allowing them to vacate the area prior to the commencement of survey equipment operation at full power. Operators should ramp up sources to half power for 5 minutes and then proceed to full power.

Ramp-up activities will be delayed if a marine mammal(s) enters its respective exclusion zone. Ramp-up will continue if the animal has been observed exiting its respective exclusion zone or until an additional time period has elapsed with no further sighting (*i.e.*, 15 minutes for small odontocetes and seals and 30 minutes for all other species).

Ramp-up may occur at times of poor visibility, including nighttime, if appropriate visual monitoring has occurred with no detections of marine mammals in the 30 minutes prior to beginning ramp-up. Acoustic source activation may only occur at night where operational planning cannot reasonably avoid such circumstances.

Shutdown Procedures

An immediate shutdown of the impulsive HRG survey equipment will be required if a marine mammal is sighted entering or within its respective exclusion zone. The vessel operator must comply immediately with any call for shutdown by the Lead PSO. Any disagreement between the Lead PSO and vessel operator should be discussed only after shutdown has occurred. Subsequent restart of the survey equipment can be initiated if the animal has been observed exiting its respective exclusion zone or until an additional time period has elapsed (*i.e.*, 15 minutes for harbor porpoise, 30 minutes for all other species).

If a species for which authorization has not been granted, or, a species for which authorization has been granted but the authorized number of takes have been met, approaches or is observed within the Level B harassment zone (refer back to Table 5), shutdown will occur.

If the acoustic source is shut down for reasons other than mitigation (*e.g.*, mechanical difficulty) for less than 30 minutes, it may be activated again without ramp-up if PSOs have maintained constant observation and no detections of any marine mammal have occurred within the respective exclusion zones. If the acoustic source is shut down for a period longer than 30 minutes, then pre-clearance and ramp-up procedures will be initiated as described in the previous section.

The shutdown requirement will be waived for pinnipeds and for small delphinids of the following genera: *Delphinus*, *Lagenorhynchus*, *Stenella*, and *Tursiops*. Specifically, if a delphinid from the specified genera or a pinniped is visually detected approaching the vessel (*i.e.*, to bow ride) or towed equipment, shutdown is not required. If there is uncertainty regarding identification of a marine mammal species (*i.e.*, whether the observed marine mammal(s) belongs to one of the delphinid genera for which shutdown is waived), PSOs must use best professional judgement in making the decision to call for a shutdown. Additionally, shutdown is required if a delphinid or pinniped is detected in the exclusion zone and belongs to a genus other than those specified.

Shutdown, pre-start clearance, and ramp-up procedures are not required during HRG survey operations using only non-impulsive sources (*e.g.,* echosounders), however, these procedure will be required for non-parametric sub-bottom profilers (*e.g.*, CHIRPs).

Vessel Strike Avoidance

NEETMA must adhere to the following measures except in the case where compliance will create an imminent and serious threat to a person or vessel or to the extent that a vessel is restricted in its ability to maneuver and, because of the restriction, cannot comply.

- Vessel operators and crews must maintain a vigilant watch for all protected species and slow down, stop their vessel, or alter course, as appropriate and regardless of vessel size, to avoid striking any protected species. A visual observer

aboard the vessel must monitor a vessel strike avoidance zone based on the appropriate separation distance around the vessel (distances stated below). Visual observers monitoring the vessel strike avoidance zone may be third-party observers (*i.e.*, PSOs) or crew members, but crew members responsible for these duties must be provided sufficient training to 1) distinguish protected species from other phenomena and 2) broadly to identify a marine mammal as a right whale, other whale (defined in this context as sperm whales or baleen whales other than right whales), or other marine mammal.

- Members of the monitoring team will consult NMFS North Atlantic right whale reporting system and WhaleAlert (*http://www.whalealert.org*), as able, for the presence of North Atlantic right whales throughout survey operations, and for the establishment of a DMA. If NMFS should establish a DMA in the survey area during the survey, the vessels will abide by speed restrictions in the DMA.
- All survey vessels, regardless of size, must observe a 10-kn (5.14 m/s) speed restriction in specific areas designated by NMFS for the protection of North Atlantic right whales from vessel strikes including seasonal management areas (SMAs) and dynamic management areas (DMAs) when in effect;
- All vessels greater than or equal to 19.8 m in overall length operating from November 1 through April 30 will operate at speeds of 10 kn (5.14 m/s) or less at all times;
- All vessels must reduce their speed to 10 kn (5.14 m/s) or less when mother/calf pairs, pods, or large assemblages of cetaceans are observed near a vessel;
- All vessels must maintain a minimum separation distance of 500 m from right whales and other ESA-listed large whales;

- If a whale is observed but cannot be confirmed as a species other than a right whale or other ESA-listed large whale, the vessel operator must assume that it is a right whale and take appropriate action;
- All vessels must maintain a minimum separation distance of 100 m from non-ESA listed whales;
- All vessels must, to the maximum extent practicable, attempt to maintain a minimum separation distance of 50 m from all other marine mammals, with an understanding that at times this may not be possible (*e.g.*, for animals that approach the vessel).
- When marine mammals are sighted while a vessel is underway, the vessel shall take action as necessary to avoid violating the relevant separation distance (*e.g.*, attempt to remain parallel to the animal's course, avoid excessive speed or abrupt changes in direction until the animal has left the area). If marine mammals are sighted within the relevant separation distance, the vessel must reduce speed and shift the engine to neutral, not engaging the engines until animals are clear of the area. This does not apply to any vessel towing gear or any vessel that is navigationally constrained.

Project-specific training will be conducted for all vessel crew prior to the start of a survey and during any changes in crew such that all survey personnel are fully aware and understand the mitigation, monitoring, and reporting requirements. Prior to implementation with vessel crews, the training program will be provided to NMFS for review and approval. Confirmation of the training and understanding of the requirements will be documented on a training course log sheet. Signing the log sheet will certify that the crew member understands and will comply with the necessary requirements throughout the survey activities.

Based on our evaluation of the applicant's measures, as well as other measures considered by NMFS, we have determined that the required mitigation measures provide

the means of effecting the least practicable impact on marine mammal species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Monitoring and Reporting

In order to issue an IHA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the action area. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

Monitoring and reporting requirements prescribed by NMFS should contribute to improved understanding of one or more of the following:

- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.*, presence, abundance, distribution, density).
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) action or environment (*e.g.*, source characterization, propagation, ambient noise); (2) affected species (*e.g.*, life history, dive patterns); (3) co-occurrence of marine mammal species with the action; or (4) biological or behavioral context of exposure (*e.g.*, age, calving or feeding areas).
- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors.

- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks.
- Effects on marine mammal habitat (*e.g.*, marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat).
- Mitigation and monitoring effectiveness.

Monitoring Measures

Visual monitoring will be performed by qualified, NMFS-approved PSOs, the resumes of whom will be provided to NMFS for review and approval prior to the start of survey activities. NEETMA will employ independent, dedicated, trained PSOs, meaning that the PSOs must 1) be employed by a third-party observer provider, 2) have no tasks other than to conduct observational effort, collect data, and communicate with and instruct relevant vessel crew with regard to the presence of marine mammals and mitigation requirements (including brief alerts regarding maritime hazards), and 3) have successfully completed an approved PSO training course appropriate for their designated task. On a case-by-case basis, non-independent observers may be approved by NMFS for limited, specific duties in support of approved, independent PSOs on smaller vessels with limited crew capacity operating in nearshore waters.

The PSOs will be responsible for monitoring the waters surrounding each survey vessel to the farthest extent permitted by sighting conditions, including exclusion zones, during all HRG survey operations. PSOs will visually monitor and identify marine mammals, including those approaching or entering the established exclusion zones during survey activities. It will be the responsibility of the Lead PSO on duty to communicate the presence of marine mammals as well as to communicate the action(s) that are necessary to ensure mitigation and monitoring requirements are implemented as appropriate.

During all HRG survey operations (*e.g.*, any day on which use of an HRG source is planned to occur), a minimum of one PSO must be on duty during daylight operations on each survey vessel, conducting visual observations at all times on all active survey vessels during daylight hours (*i.e.*, from 30 minutes prior to sunrise through 30 minutes following sunset). Two PSOs will be on watch during nighttime operations. The PSO(s) will ensure 360° visual coverage around the vessel from the most appropriate observation posts and will conduct visual observations using binoculars and/or night vision goggles and the naked eye while free from distractions and in a consistent, systematic, and diligent manner. PSOs may be on watch for a maximum of 4 consecutive hours followed by a break of at least 2 hours between watches and may conduct a maximum of 12 hours of observation per 24-hr period. In cases where multiple vessels are surveying concurrently, any observations of marine mammals will be communicated to PSOs on all nearby survey vessels.

PSOs must be equipped with binoculars and have the ability to estimate distance and bearing to detect marine mammals, particularly in proximity to exclusion zones. Reticulated binoculars must also be available to PSOs for use as appropriate based on conditions and visibility to support the sighting and monitoring of marine mammals. During nighttime operations, night-vision goggles with thermal clip-ons and infrared technology will be used. Position data will be recorded using hand-held or vessel GPS units for each sighting.

During good conditions (*e.g.,* daylight hours; Beaufort sea state (BSS) 3 or less), to the maximum extent practicable, PSOs will also conduct observations when the acoustic source is not operating for comparison of sighting rates and behavior with and without use of the active acoustic sources. Any observations of marine mammals by crew members aboard any vessel associated with the survey will be relayed to the PSO team. Data on all PSO observations will be recorded based on standard PSO collection

requirements. This will include dates, times, and locations of survey operations; dates and times of observations, location and weather; details of marine mammal sightings (*e.g.*, species, numbers, behavior); and details of any observed marine mammal behavior that occurs (*e.g.*, noted behavioral disturbances).

Reporting Measures

Within 90 days after completion of survey activities or expiration of this IHA, whichever comes sooner, a draft report will be provided to NMFS that fully documents the methods and monitoring protocols, summarizes the data recorded during monitoring, summarizes the number of marine mammals observed during survey activities (by species, when known), summarizes the mitigation actions taken during surveys (including what type of mitigation and the species and number of animals that prompted the mitigation action, when known), and provides an interpretation of the results and effectiveness of all mitigation and monitoring. A final report must be submitted within 30 days following resolution of any comments on the draft report. All draft and final marine mammal and acoustic monitoring reports must be submitted to *PR.ITP.MonitoringReports@noaa.gov*, *nmfs.gar.incidental-take@noaa.gov*, and *ITP.Potlock@noaa.gov*. The report must contain at minimum, the following:

- PSO names and affiliations;
- Dates of departures and returns to port with port name;
- Dates and times (Greenwich Mean Time) of survey effort and times corresponding with PSO effort;
- Vessel location (latitude/longitude) when survey effort begins and ends;
- Vessel location at beginning and end of visual PSO duty shifts;
- Vessel heading and speed at beginning and end of visual PSO duty shifts and upon any line change;

- Environmental conditions while on visual survey (at beginning and end of PSO shift and whenever conditions change significantly), including wind speed and direction, Beaufort sea state, Beaufort wind force, swell height, weather conditions, cloud cover, sun glare, and overall visibility to the horizon;
- Factors that may be contributing to impaired observations during each PSO shift change or as needed as environmental conditions change (*e.g.*, vessel traffic, equipment malfunctions); and
- Survey activity information, such as type of survey equipment in operation, acoustic source power output while in operation, and any other notes of significance (*i.e.*, pre-start clearance survey, ramp-up, shutdown, end of operations, etc.).

If a marine mammal is sighted, the following information should be recorded:

- Watch status (sighting made by PSO on/off effort, opportunistic, crew, alternate vessel/platform);
- PSO who sighted the animal;
- Time of sighting;
- Vessel location at time of sighting;
- Water depth;
- Direction of vessel's travel (compass direction);
- Direction of animal's travel relative to the vessel;
- Pace of the animal;
- Estimated distance to the animal and its heading relative to vessel at initial sighting;
- Identification of the animal (*e.g.*, genus/species, lowest possible taxonomic level, or unidentified); also note the composition of the group if there is a mix of species;
- Estimated number of animals (high/low/best);

- Estimated number of animals by cohort (adults, yearlings, juveniles, calves, group composition, etc.);
- Description (as many distinguishing features as possible of each individual seen, including length, shape, color, pattern, scars or markings, shape and size of dorsal fin, shape of head, and blow characteristics);
- Detailed behavior observations (*e.g.*, number of blows, number of surfaces, breaching, spyhopping, diving, feeding, traveling; as explicit and detailed as possible; note any observed changes in behavior);
- Animal's closest point of approach and/or closest distance from the center point of the acoustic source;
- Platform activity at time of sighting (*e.g.*, deploying, recovering, testing, data acquisition, other); and
- Description of any actions implemented in response to the sighting (*e.g.*, delays, shutdown, ramp-up, speed or course alteration, etc.) and time and location of the action.

If a North Atlantic right whale is observed at any time by PSOs or personnel on any Project vessels, during surveys or during vessel transit, NEETMA must immediately report sighting information to the NMFS North Atlantic Right Whale Sighting Advisory System: (866) 755-6622. North Atlantic right whale sightings in any location may also be reported to the U.S. Coast Guard via Channel 16.

In the event that NEETMA personnel discover an injured or dead marine mammal, NEETMA will report the incident to the NMFS Office of Protected Resources (OPR) and the NMFS New England/Mid-Atlantic Stranding Coordinator (978-282-8478 or 978-281-9291) as soon as feasible. The report will include the following information:

- Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);

- Species identification (if known) or description of the animal(s) involved;
- Condition of the animal(s) (including carcass condition if the animal is dead);
- Observed behaviors of the animal(s), if alive;
- If available, photographs or video footage of the animal(s); and
- General circumstances under which the animal was discovered.

In the unanticipated event of a ship strike of a marine mammal by any vessel involved in the activities covered by the IHA, NEETMA will report the incident to the NMFS OPR and the NMFS New England/Mid-Atlantic Stranding Coordinator (978-282-8478 or 978-281-9291) as soon as feasible. The report will include the following information:

- Time, date, and location (latitude/longitude) of the incident;
- Species identification (if known) or description of the animal(s) involved;
- Vessel's speed during and leading up to the incident;
- Vessel's course/heading and what operations were being conducted (if applicable);
- Status of all sound sources in use;
- Description of avoidance measures/requirements that were in place at the time of the strike and what additional measures were taken, if any, to avoid strike;
- Environmental conditions (*e.g.*, wind speed and direction, Beaufort sea state, cloud cover, visibility) immediately preceding the strike;
- Estimated size and length of animal that was struck;
- Description of the behavior of the marine mammal immediately preceding and following the strike;
- If available, description of the presence and behavior of any other marine mammals immediately preceding the strike;

- Estimated fate of the animal (*e.g.*, dead, injured but alive, injured and moving, blood or tissue observed in the water, status unknown, disappeared); and
- To the extent practicable, photographs or video footage of the animal(s).

Negligible Impact Analysis and Determination

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be "taken" through harassment, NMFS considers other factors, such as the likely nature of any responses (*e.g.*, intensity, duration), the context of any responses (*e.g.*, critical reproductive time or location, migration), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS's implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the environmental baseline (*e.g.*, as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

To avoid repetition, our analysis applies to all the species listed in Table 3 given that NMFS expects the anticipated effects of the survey to be similar in nature. Where there are meaningful differences between species or stocks - as is the case of the North Atlantic right whale - they are included as separate subsections below. NMFS does not

anticipate that serious injury or mortality will occur as a result from HRG surveys, even in the absence of mitigation, and no serious injury or mortality is authorized.

As discussed in the Potential Effects of Specified Activities on Marine Mammals and their Habitat section of the proposed **Federal Register** notice (87 FR 27575; May 9, 2022), non-auditory physical effects and vessel strike are not expected to occur. NMFS expects that all potential takes will be in the form of short-term Level B behavioral harassment in the form of temporary avoidance of the area or decreased foraging (if such activity were occurring), reactions that are considered to be of low severity and with no lasting biological consequences (*e.g.*, Southall *et al*., 2007). Even repeated Level B harassment of some small subset of an overall stock is unlikely to result in any significant realized decrease in viability for the affected individuals, and thus will not result in any adverse impact to the stock as a whole. As described previously, Level A harassment is not expected to occur given the nature of the operations and the estimated size of the Level A harassment zones.

In addition to being temporary, the maximum expected harassment zone around a survey vessel is 141 m. Although this distance is assumed for all survey activities in estimating take numbers and evaluated here, in reality much of the survey activity will involve use of non-impulsive acoustic sources with a reduced acoustic harassment zone of 48 m, producing expected effects of particularly low severity. Therefore, the ensonified area surrounding each vessel is relatively small compared to the overall distribution of the animals in the area and their use of the habitat. Feeding behavior is not likely to be significantly impacted as prey species are mobile and are broadly distributed throughout the survey area; therefore, marine mammals that may be temporarily displaced during survey activities are expected to be able to resume foraging once they have moved away from areas with disturbing levels of underwater noise. Because of the temporary nature of the disturbance and the availability of similar habitat and resources

in the surrounding area, the impacts to marine mammals and the food sources that they utilize are not expected to cause significant or long-term consequences for individual marine mammals or their populations.

There are no rookeries, mating or calving grounds known to be biologically important to marine mammals within the survey area and there are no feeding areas known to be biologically important to marine mammals within the survey area. There is no designated critical habitat for any ESA-listed marine mammals in the survey area.

North Atlantic Right Whales

The status of the North Atlantic right whale population is of heightened concern and, therefore, merits additional analysis. As noted previously, elevated North Atlantic right whale mortalities began in June 2017 and there is an active UME. Overall, preliminary findings support human interactions, specifically vessel strikes and entanglements, as the cause of death for the majority of right whales. As noted previously, the survey area overlaps a migratory corridor BIA for North Atlantic right whales. Due to the fact that the survey activities are temporary and the spatial extent of sound produced by the survey will be very small relative to the spatial extent of the available migratory habitat in the BIA, right whale migration is not expected to be impacted by the survey. Given the relatively small size of the ensonified area, it is unlikely that prey availability will be adversely affected by HRG survey operations. Required vessel strike avoidance measures will also decrease risk of ship strike during migration; no ship strike is expected to occur during NEETMA's activities. Additionally, only very limited take by Level B harassment of North Atlantic right whales has been requested and is authorized by NMFS, as HRG survey operations are required to maintain a 500 m EZ and shutdown if a North Atlantic right whale is sighted at or within the EZ. The 500 m shutdown zone for right whales is conservative, considering the Level B harassment isopleth for the most impactful acoustic source (*i.e.*, sparker) is estimated to

be 141 m, and thereby minimizes the potential for behavioral harassment of this species. As noted previously, Level A harassment is not expected due to the small PTS zones associated with HRG equipment types planned for use. NMFS does not anticipate North Atlantic right whales takes that will result from NEETMA's survey activities will impact annual rates of recruitment or survival. Thus, any takes that occur will not result in population level impacts.

Other Marine Mammal Species with Active UMEs

As noted previously, there are several active UMEs occurring in the vicinity of NEETMA's survey area. Elevated humpback whale mortalities have occurred along the Atlantic coast from Maine through Florida since January 2016. Of the cases examined, approximately half had evidence of human interaction (ship strike or entanglement). The UME does not yet provide cause for concern regarding population-level impacts. Despite the UME, the relevant population of humpback whales (the West Indies breeding population, or DPS) remains stable at approximately 12,000 individuals.

Beginning in January 2017, elevated minke whale strandings have occurred along the Atlantic coast from Maine through South Carolina, with highest numbers in Massachusetts, Maine, and New York. This event does not provide cause for concern regarding population level impacts, as the likely population abundance is greater than 20,000 whales.

The required mitigation measures are expected to reduce the number and/or severity of takes for all species listed in Table 3, including those with active UMEs, to the level of least practicable adverse impact. In particular they will provide animals the opportunity to move away from the sound source throughout the survey area before HRG survey equipment reaches full energy, thus preventing them from being exposed to sound levels that have the potential to cause injury (Level A harassment) or more severe Level

B harassment. No Level A harassment is anticipated, even in the absence of mitigation measures, or authorized for this Project.

NMFS expects that takes will be in the form of short-term Level B behavioral harassment by way of brief startling reactions and/or temporary vacating of the area, or decreased foraging (if such activity was occurring)—reactions that (at the scale and intensity anticipated here) are considered to be of low severity, with no lasting biological consequences. Since both the sources and marine mammals are mobile, animals will only be exposed briefly to a small ensonified area that might result in take. Additionally, required mitigation measures will further reduce exposure to sound that could result in more severe behavioral harassment.

Biologically Important Areas for Other Species

As previously discussed, impacts from the Project are expected to be localized to the specific area of activity and only during periods of time where NEETMA's acoustic sources are active. While areas of biological importance to fin whales, humpback whales, and harbor seals can be found off the coast of New Jersey and New York, NMFS does not expect this action to affect these areas. These important areas are found outside of the range of this survey area, as is the case with fin whales and humpback whales (BIAs found further north), and, therefore, not expected to be impacted by NEETMA's survey activities.

There are three major haul-out sites exist for harbor seals along New Jersey, including at Great Bay, Sand Hook, and Barnegat Inlet (CWFNJ, 2015). As hauled out seals will be out of the water, no in-water effects are expected.

Determinations

In summary and as described previously, the following factors primarily support our determination that the impacts resulting from this activity are not expected to

adversely affect the species or stock through effects on annual rates of recruitment or survival:

- No mortality or serious injury is anticipated or will be authorized;
- No Level A harassment is anticipated, even in the absence of mitigation measures, or authorized;
- Foraging success is not likely to be significantly impacted as effects on species that serve as prey species for marine mammals from the survey are expected to be minimal;
- The availability of alternate areas of similar habitat value for marine mammals to temporarily vacate the survey area during the planned survey to avoid exposure to sounds from the activity;
- Take is anticipated to be by Level B behavioral harassment only, consisting of brief startling reactions and/or temporary avoidance of the survey area;
- While the survey area is within areas noted as a migratory BIA for North Atlantic right whales, the activities will occur in such a comparatively small area such that any avoidance of the survey area due to activities will not affect migration. In addition, mitigation measures require shutdown at 500 m (almost four times the size of the Level B harassment isopleth (141 m)), which minimizes the effects of the take on the species; and,
- The required mitigation measures, including visual monitoring and shutdowns, are expected to minimize potential impacts to marine mammals.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the required mitigation, monitoring, and reporting measures, NMFS finds that the total marine mammal take from NEETMA's survey activities will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

As noted previously, only small numbers of incidental take may be authorized under sections 101(a)(5)(A) and (D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. When the predicted number of individuals to be taken is fewer than one third of the species or stock abundance, the take is considered to be of small numbers. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

NMFS proposes to authorize incidental take of 15 marine mammal species (with 16 managed stocks). The total amount of takes authorized relative to the best available population abundance is less than 8.5 percent for each stock which NMFS finds are small numbers of marine mammals relative to the estimated overall population abundances for those stocks (Table 3).

Based on the analysis of the specified activity contained herein and in our Notice proposing issuance of the IHA (including the required mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS finds that small numbers of marine mammals will be taken relative to the population size of the affected species or stocks.

Unmitigable Adverse Impact Analysis and Determination

There are no relevant subsistence uses of the affected marine mammal stocks or species implicated by this action. Therefore, NMFS has determined that the total taking of affected species or stocks will not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Endangered Species Act

Section 7(a)(2) of the Endangered Species Act of 1973 (ESA: 16 U.S.C. 1531 *et seq*.) requires that each Federal agency insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the issuance of IHAs, NMFS Office of Protected Resources (OPR) consults internally whenever we propose to authorize take for endangered or threatened species.

NMFS is authorizing the incidental take of four species of marine mammals which are listed under the ESA, including the North Atlantic right, fin, sei, and sperm whale, and has determined that these activities fall within the scope of activities analyzed in GARFO's programmatic consultation regarding geophysical surveys along the U.S. Atlantic coast in the three Atlantic Renewable Energy Regions (completed June 29, 2021; revised September 2021). The consultation concluded that NMFS' authorization of take incidental to these types of activities under the MMPA is not likely to adversely affect ESA-listed marine mammals.

National Environmental Policy Act

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq*.) and NOAA Administrative Order (NAO) 216-6A, NMFS must review our action (*i.e.*, the issuance of an IHA) with respect to potential impacts on the human environment.

This action is consistent with categories of activities identified in Categorical Exclusion B4 (IHAs with no anticipated serious injury or mortality) of the Companion Manual for NOAA Administrative Order 216-6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that

will preclude this categorical exclusion. Accordingly, NMFS has determined that the issuance of the final IHA qualifies to be categorically excluded from further NEPA review.

Authorization

As a result of these determinations, NMFS has issued an IHA to NEETMA for conducting site characterization surveys off New Jersey from July 1, 2022 through June 30, 2023, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. The final IHA and NEETMA's IHA application can be found on NMFS' website at *https://www.fisheries.noaa.gov/action/incidental-take-authorization-nextera-energy-transmission-midatlantic-holdings-llc-marine*.

Dated: July 5, 2022.

Kimberly Damon-Randall,

Director, Office of Protected Resources,

National Marine Fisheries Service.

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